



Gosford City Campus Development

University of Newcastle

Parking and Transport
Assessment

Stage 1

December 2022

SECAsolution 

Gosford City Campus Development Mann Street and Beane Street, Gosford

Parking and Transport Assessment

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1 Introduction

1.1 Background

Seca Solution Pty Ltd has been commissioned by Lyons on behalf of the University of Newcastle to prepare a mode share and transport impact assessment for Stage 1 of the proposed Gosford City Campus Development (GCCD) to be located at the corner of Mann Street and Beane Street, Gosford.

The subject site, zoned B4, has previously operated as a Mitre 10 Hardware store with a shopfront on Mann Street and a large hardstand area off Hills Street to the rear.

The concept for the campus provides teaching accommodation, and space to suit an Innovation Centre along with Community engagement. The development will seek to provide a building fostering collaboration in the areas of education and entrepreneurial endeavour.

The development will provide a showcase for innovation with a Green Star rating and sustainable travel encouraged to access the site.

1.2 Scope of Report

The scope of this report is to undertake an assessment of the existing traffic and transport situation, the public transport network in Gosford and surrounds and opportunities for access to Gosford taking into consideration policies and strategies to provide for a shift in travel culture favouring the use of public transport, walking and cycling. In doing so to then determine the parking and transport requirements for Stage 1 of the proposed development. These requirements shall take into consideration the demographics and travel needs of the end users of the GCCD.

1.3 GCCD Transport Access Strategy

The proposal to incorporate the GCCD into the Gosford city centre is based in part on increases in the number of people living and working in the City with GCCD providing for significant staff and students over time.

This Transport Access Strategy (TAS) considers the strategic policies for Gosford City Centre and the University's sustainable transport goals including the analyses of case studies of similar projects including Q Building and NUSpace in Newcastle.

Overall the GCCD TAS has been developed with consideration to the future of the Gosford City Centre and the University and supports the strategy based on:

- The projected higher density population within Gosford and surrounds will provide further opportunities to increase active travel in the Gosford City Centre;
- Quality transport opportunities enables the University to benefit from public transport usage;
- University existing transport-related data demonstrates that commencing students are already driving less and are seeking other modes of transport; the University of Newcastle is committed to support sustainable transport modes and will encourage this behaviour shift;
- Other Universities, like UTS, have been implementing similar transport strategies, anchored around active and public transport, and have been instrumental in changing behaviours.

The University of Newcastle Transport Access Strategy for GCCD is a long-term strategy that aligns with the future of the Gosford City Centre and supports the University's commitment to promote sustainable transport options.

1.4 Issues and Objectives of the study

The issues relative to the proposal are:

- Consider the Stage 1 proposal in determining the impact of the development on the road network, including pedestrian facilities, cycling facilities and public transport
- Consider the GCCD TAS on determining the parking demands for the development
- Review the service arrangement for the development; and
- Assess any other transport impacts associated with the proposal

The objective of the report is to document the impacts of Stage 1 and provide advice on any infrastructure work required as part of the proposal.

1.5 SEARS

10. Traffic, Transport and Accessibility

Provide a transport and accessibility impact assessment, which includes:	
an analysis of the existing transport network, including the road hierarchy	2.4 Existing Situation
and any pedestrian, bicycle or public transport infrastructure, current	2.4.3 Pedestrian and Cycling Facilities 2.9 Pedestrian and Cycling Network
daily and peak hour vehicle movements, and existing performance levels of nearby intersections.	2.5 Traffic Flows
details of the proposed development, including pedestrian and vehicular access arrangements (including swept path analysis of the largest vehicle and height clearances),	3.0 Proposed Development 3.2 Access
parking arrangements and rates	3.4 Parking
(including bicycle and end-of-trip facilities), drop-off/pick-up-zone(s) and	3.4.3 Pedestrian and Cycling Facilities
bus bays (if applicable), and provisions for servicing and loading/unloading.	3.3 Site Servicing
analysis of the impacts of the proposed development during construction	4.9 Impact of Construction Traffic
and operation (including justification for the methodology used), including predicted modal split,	4.1 and 4.2 Mode Travel Targets
a forecast of additional daily and peak hour	4.3 Traffic Generation
multimodal network flows as a result of the development (using industry standard modelling), identification of potential traffic impacts on road capacity, intersection performance and road safety (including pedestrian and cyclist conflict) and any cumulative impact from surrounding approved developments.	4.5 Traffic Impact Assessment 4.8 Impact on Road Safety
measures to mitigate any traffic impacts, including details of any new or upgraded infrastructure to achieve acceptable performance and safety, and the timing, viability and mechanisms of delivery (including proposed arrangements with local councils or government agencies) of any infrastructure improvements in accordance with relevant standards.	The mode share target allowing 5% of occupants on site to drive, and the provision of 24 parking spaces on site, will see up to 35 trips generated by the site in the AM peak. 24 of these would approach along Hills Street, with a split 60/40 consistent with the AM flows on Mann Street. Additional trips shall be distributed across the broader road network with the grid patterns of roads providing various routes depending upon the origin/destination of trips. This distribution reduces the impact at any one intersection with the main intersections being the 4 way roundabouts at Hills Street/Etna Road (14 trips) and Hills Street/Beane Street (10 trips). The impact of these additional trips will be minimal and well within the capacity of these roundabouts. The impact of this vehicle traffic on the local road network is therefore considered acceptable.

measures to promote sustainable travel choices for employees, residents, students and visitors, such as connections into existing walking and cycling networks, minimising car parking provision, encouraging car share and public transport, providing adequate bicycle parking and high quality end-of-trip facilities, and implementing a Green Travel Plan.	5.0 Measures to promote active travel choices
Provide a Construction Traffic Management Plan detailing predicted construction vehicle routes, access and parking arrangements, coordination with other construction occurring in the area, and how impacts on existing traffic, pedestrian and bicycle networks would be managed and mitigated.	Separate Cover

1.6 Planning Context

In preparing this document, the following publications and documents were used:

- Australian / New Zealand Standard – Parking Facilities Part 1: off-street car parking (AS2890.1:2004);
- RMS Guide to Traffic Generating Developments, Version 2.2 Dated October 2002;
- RMS TDT 2013/04 “Update Traffic surveys August 2013”.
- Central Coast Regional Transport Plan 2014
- SEPP Gosford City Centre 2018
- Gosford City Council Development Control Plan 2018
- Gosford Bike Plan 2019-2029
- Gosford Pedestrian and Mobility Plan 2019
- Y Combinator Start Up School Podcasts 2015-2016 Stanford University
- HCCD Transport Access Strategy (Seca Solution 2018)
- HCCD Parking and Transport Assessment – Concept Master Plan (Seca Solution 2018)

2 Existing Situation

2.1 Site Description and Proposed Activity

The subject site is located within the Gosford city centre on a site previously operating as a Mitre10 Hardware store.

The project allows for a city based campus and accommodates teaching and workspaces for the university including space to incorporate an Innovation Centre.

2.2 Site Location

Located at the northern end of the Gosford CBD, the design seeks to activate the street frontages along Mann Street (west) and Beane Street (south) whilst also seeing light vehicle access from Hill Street (east).

The subject site is surrounded by commercial and mixed-use development to the north with residential development to the east. To the west is the heavy rail corridor with Gosford Hospital to the west of that again.

South of the site is the main shops and commercial space associated with the city centre along with the Gosford transport interchange including bus and train services.

The location of the site is shown below in **Figure 2-1**.



Figure 2-1 Site Location (Source: Nearmap)

2.3 Site Access

Historic vehicle access to the site has been from Hills Street along the eastern frontage. Pedestrian access has been from Mann Street and Beane Street.

2.4 Existing Traffic Conditions

2.4.1 Road Hierarchy

The major road through the locality is **Mann Street**, which forms part of the Pacific Highway. The Pacific Highway forms part of the regional road network and to the north of the site, from its intersection with Henry Parry Drive, forms part of HW10. In the immediate vicinity of the site Mann Street is an unclassified regional road. Council is therefore the road authority.

Mann Street provides a single lane of travel in each direction in the immediate vicinity of the subject site, with timed parking on street permitted for much of its length. There is no central median, allowing vehicles to turn right in and out of numerous existing developments along this length of Mann Street. It operates under the posted speed limit of 60 km/h. There are footways to both sides of the road and there are signal controlled intersections at key locations along the length of the road that allow for pedestrian movements across Mann Street.

Mann Street connects with Beane Street adjacent to the subject site at a T-intersection with Mann Street having priority. Beane Street is a local street providing access to various business sites and to the east to the local established housing area.

To the east of the site is Hills Street which connects with Beane Street via a 4-way roundabout. Hills Street connects with Watt Street to the south and runs in a north-south direction parallel to Mann Street, allowing for alternative access routes to connect with the centre of Gosford to the south of the site.

To the north Hills Street connects with Etna Street via a 4-way roundabout. Etna Street then connects with Mann Street via a 4-way signal controlled intersection. The fourth leg of the intersection is Racecourse Road that connects over the nearby railway line and provides access to Gosford Hospital and a connection further south-west of the location with the Central Coast Highway.

Parking is restricted at the immediate approach to the traffic signals at Mann Street to ensure maximum capacity for vehicles approaching the signals.

2.4.2 Roadworks

At the time of this project Mann Street south of the site was partially closed due to upgrades associated with storm water and sewer. No other road works were noted in the location.

Past discussions with Council indicated that the intersection of Mann Street and Etna Street was reviewed to consider improvements to the capacity and operation of this intersection. It is understood that the railway bridge over the main rail line (to the west of the intersection) is the main capacity constraint and that options for upgrading this bridge to provide 2 lanes of travel in both directions, whilst being investigated, had no plans for works nor any timetable for works available.

2.4.3 Pedestrian and Cycling Facilities

The site benefits from exiting pedestrian pathways along the three site frontages. These connect with existing public transport services running along Mann Street.

There are no mid-block pedestrian crossings along Mann Street however there are splitter islands with pedestrian refuges at the roundabout intersection of Mann Street and Faunce Street south of the site in the vicinity of the railway station and bus interchange. There is also an overhead pedestrian bridge 50m south of this intersection.

The signalised intersection of Mann Street and Racecourse Road to the north of the site provides pedestrian phases on 3 of the 4 legs allowing for safe pedestrian movements at this intersection and full connectivity.

There are pedestrian pathways across the heavy rail line between the site and Gosford Hospital with a fenced path on the northern side which in turn connects with the signalised pedestrian crossing on Mann Street. To use the pathway on the southern side of the bridge pedestrians need to cross along Mann Street and use the footpaths on the western side of Mann Street. There are no crossing facilities provided to support this between Beane Street and Racecourse Road.

2.5 Traffic Flows

2.5.1 Peak Hour Flows

Traffic surveys could not be undertaken adjacent to the site due to the current partial road closure of Mann Street and the detour of traffic, including buses, along Beane Street and Watts Street. These closures, originally scheduled to be finished by the end of November have been extended to at least late December and so traffic data shall be collected once schools and normal traffic patterns resume in February 2023.

Data collected by Seca Solution in 2015 determined the two-way flows on Mann Street (south of Etna Street) were:

- 864vph split 505 southbound (58%) in the morning peak; and
- 968 vph split 559 northbound (58%) in the in the afternoon peak

The TfNSW Traffic Volume Viewer provides data from the automatic count station to the north of the site on the Pacific Highway (ID05793). This data (2010) indicates that the daily traffic flow was in the order of 19,250 vehicles per day. Data was also provided for further north on the Pacific Highway, near Narara (approx. 5 kms north of the subject site). This second data shows that from 2006 through to 2018 the daily traffic flow has changed from 26,506 in 2006 to 26,288 in 2015 and 25,790 in 2018, indicating that there has been very little growth along this corridor

The RTA Guide to Traffic Generating Developments provides guidance on the hourly capacity of an urban road which shows that during both the morning and afternoon peak period on Mann Street is operating at a level of service of C for the peak movement.

2.5.2 Daily Traffic Flows

Typically, peak hour flows represent in the order of 10% of the daily flows and on this basis the daily traffic flows along Mann Street could be in the order of 8700-9700 vehicles per day.

2.5.3 Daily Traffic Flow Distribution

Daily traffic movements are reasonably balanced in both directions.

North of the site there is a strong bias of traffic to and from Racecourse Road and north along Mann Street, reflecting demands associated with the hospital, schools and the connection through to the Central Coast Highway.

2.5.4 Vehicle Speeds

No speed surveys were completed as part of the study work. It is considered however that drivers do not speed in this location due to its interaction with the intersections as well as the heavy vehicle flows in the peak periods.

2.5.5 Existing Site Flows

The site has been vacant for some time however historically operated as a Mitre 10 hardware store and so would have generated traffic flows, both light and heavy, associated with this use.

2.5.6 Heavy Vehicle Flows

Heavy vehicle demands along Mann Street are typically associated with the various bus services which operate along this corridor. The route is otherwise not appealing for through traffic however there are deliveries to the various commercial businesses in the CBD.

2.5.7 Current Road Network Operation

Current observations on site show that the surrounding road network operates well with minimal delays.

The intersection of Mann Street and Racecourse Road / Etna Street however creates delays and congestion for drivers, but the queues for each approach clear on most cycles of the green phase.

There is a very high demand for the right turn southbound on Mann Street turning into Racecourse Road and the reverse left turn movement. The delays for these turning movements are exacerbated by the single lane of travel over the railway line and the operation of the roundabout of Racecourse Road and Showground Road. This is a single lane roundabout with restricted visibility and vehicle movement through this roundabout are slow, leading to queues back to Mann Street.

2.6 Traffic Safety and Accident History

Crash data obtained from the NSW Centre for Road Safety indicates there have been a number of accidents in the locality of the subject site over the 5 years 2017-2021.

The accident data shows 3 accidents at Mann Street and Beane Street (1 with moderate injuries to 2 people being an off left on left bend, 1 serious injury to a pedestrian and the other no injury). There have been no accidents at the roundabout intersection of Beane Street and Hills Street or Hills Street and Etna Street.

The intersection of Mann Street and Etna Street has seen 12 accidents, the majority reflective of the nature of this being a signalised 4-way intersection. No crashes resulted in serious or fatal injuries.

2.7 Parking Supply and Demand

2.7.1 On-street Parking Provision

Parking is generally available along the streets fronting the site with 1 or 2 hour parking restrictions Monday to Friday and Saturday mornings.

Parking controls on Beane Street include a No Parking zone except for buses.

2.7.2 Off-Street Parking Provision

Off-street parking is available to the public in the Gosford City Car Park at 1 Baker Street. This multi-deck carpark with 650 places is open Monday to Friday 6am to 8pm and Saturday 7.30am-3pm. It is also open to provide for local events at the Industree Group Stadium (Central Coast Stadium).

Off Street parking is provided for commuters at the Gosford Station carpark (1050 spaces) with public parking for shoppers within the city centre.

It is noted that historically many established developments throughout the City have not provided off-street parking and have been reliant upon public transport, public parking stations or on-street parking.

2.7.3 Historical Parking Provision

As a hardware store the site provided parking for shoppers with access off Hills Street. There was a large hardstand area providing parking and access for deliveries and commercial vehicles.

2.7.4 Parking Demand and Utilisation

There is generally a high demand for parking in the locality of the site, both on-street and off-street. A review of aerial imagery for mid week versus a Sunday shows that the vast majority of this is associated with the various businesses throughout the city centre. The timed parking within the immediate vicinity of the site would ensure a suitable turn over of parking in the area.

2.7.5 Short term Set down or pick up areas

There are no set down/pick up areas noted within the immediate vicinity of the site.

2.8 Public Transport

2.8.1 Rail Station Locations

Gosford railway station is approximately 300 metres south of the site on Mann Street. This station services the Central Coast and Newcastle line and provides a link for trains to Sydney and beyond to the south and Newcastle and beyond to the north. All trains stop at Gosford providing a high frequency of service for commuters and day travellers. This is reflected in the high number of commuters between Gosford and Sydney each day.

2.8.2 Bus Routes and Associated Facilities

There is an extensive range of bus services and routes operating through the Gosford CBD as shown below, utilising bus stops along Mann Street in the vicinity of the subject site.

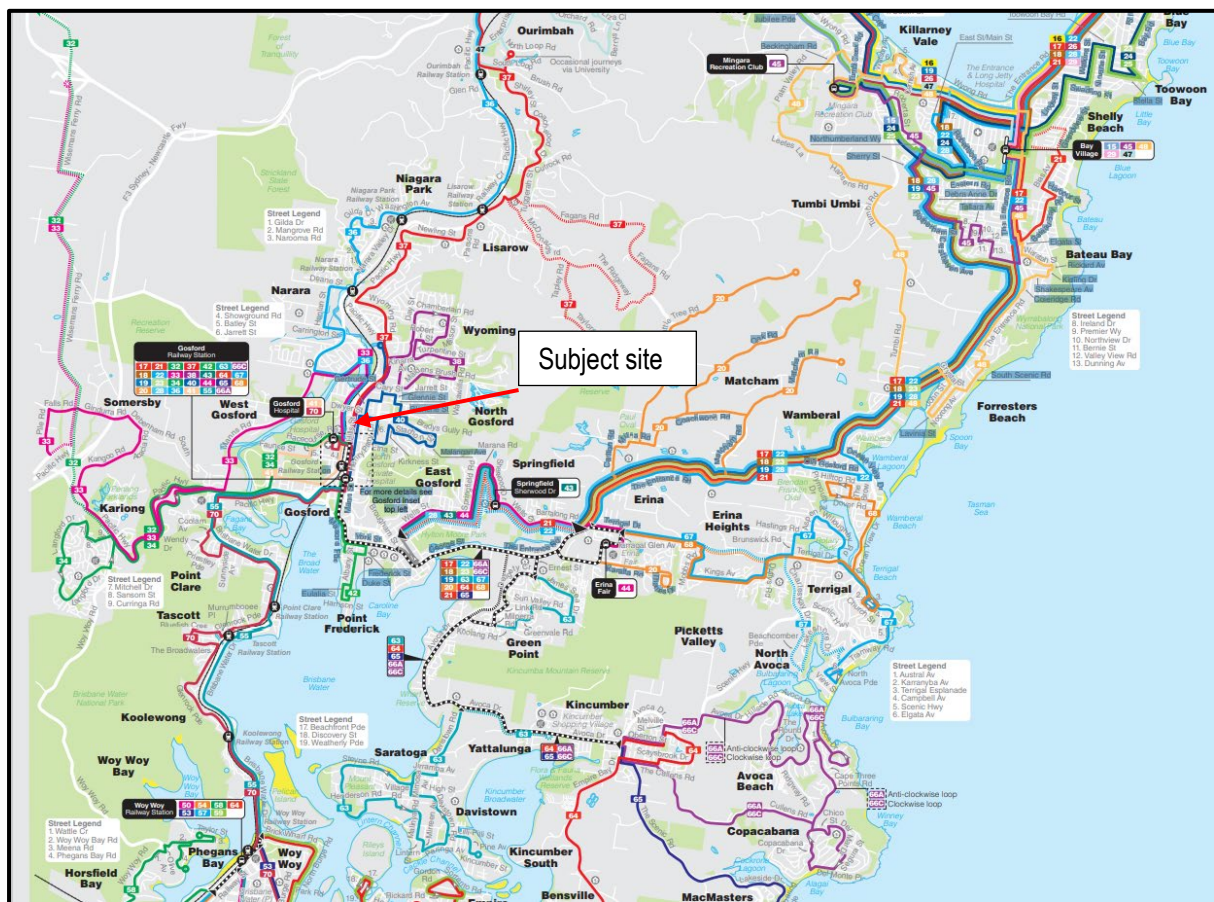


Figure 2-2 Network map showing extent of services operating from the Gosford CBD

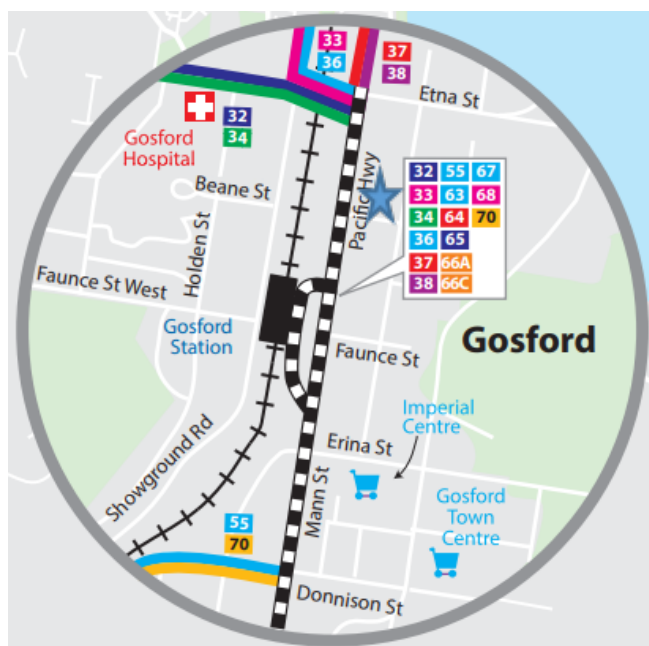


Figure 2-3 Busways transport services operating from the Gosford CBD (★ - subject site)

There is a bus stop on both sides of Mann Street north of the site whilst to the south of the site there is the Gosford interchange with extensive bus facilities including seats and shelters.

Gosford Station Public Transport Map



B	Stand A Stop no. 225047 17 The Entrance North 17X The Entrance 18 The Entrance 19 Wyong 21 The Entrance North 22 The Entrance 23 The Entrance 28 The Entrance North	Stand C Stop no. 225045 40 Gosford via North Gosford 43 Springfield 44 Erina	Stand D Stop no. 225044 38 Gosford via Wyong	Stand E Stop no. 225043 36 Tuggerah 37 Tuggerah	Stand F Stop no. 225042 32 Spencer	Stand G Stop no. 225041 55 Ettalong Beach 70 Ettalong Beach	Stand H Stop no. 225048 67 Gosford via North Avoca 68 Gosford via Wamberal	Stand J Stop no. 225049 64 Woy Woy 65 Wagstaffe	Stand K Stop no. 225050 63 Gosford via Serravallo	Stand L Stop no. 225051 20 Gosford via Matcham 42 Gosford via Point Frederick	Stand M Stop no. 225052 41 Gosford via West Gosford	Stand N Stop no. 2250628 Arrivals only
	Stand B Stop no. 225046 17 The Entrance North 17X The Entrance 18 The Entrance 19 Wyong 21 The Entrance North 22 The Entrance 23 The Entrance	Stand D Stop no. 225044 38 Gosford via Wyong	Stand E Stop no. 225043 36 Tuggerah 37 Tuggerah	Stand F Stop no. 225042 32 Spencer	Stand G Stop no. 225041 55 Ettalong Beach 70 Ettalong Beach	Stand H Stop no. 225048 67 Gosford via North Avoca 68 Gosford via Wamberal	Stand J Stop no. 225049 64 Woy Woy 65 Wagstaffe	Stand K Stop no. 225050 63 Gosford via Serravallo	Stand L Stop no. 225051 20 Gosford via Matcham 42 Gosford via Point Frederick	Stand M Stop no. 225052 41 Gosford via West Gosford	Stand N Stop no. 2250628 Arrivals only	
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Going to the beach?

Avoca Beach 66A Stand J 66C Stand J	Erralong Beach 55 Stand G 70 Stand G	Foresters Beach 19 Stand A and B 21 Stand A and B	Terrigal Beach 67 Stand H 68 Stand H	The Entrance Beach 21 Stand A and B 22 Stand A and B 23 Stand A and B	Toowoona Bay Beach 23 Stand A and B	Wamberal Beach 68 Stand H
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For more information
transportnsw.info



Figure 2-4 Transport services operating from the Gosford Station

2.8.3 Rail and Bus Service Frequencies

As the hub for most bus services through the Central Coast, the CBD provides access to a wide range of bus services with high frequency reflecting its importance as a major transport interchange. Bus services are provided by Busways, Red Bus Services and Coastaliner.

Train services run every hour during the morning and afternoon peak periods to Newcastle and more frequently to Sydney.

2.9 Pedestrian and Cycling Network

There is a well-developed network of footpaths in the locality, allowing for good connectivity to local attractions throughout the Gosford city centre.

Whilst there are some shared pathways and identified cycling routes in the Central Coast LGA, there are also gaps in connections. Whilst quite streets allow for suitable riding options, the topography can create barriers for some riders. The uptake of e-bike and e-scooters is however overcoming this for many riders.

The Central Coast Bike Plan 2019-2029 has identified a series of prioritised routes including a focus on transport hubs which may over time see ongoing upgrades to the network surrounding Gosford.

Bike Storage is available at Gosford Station. The bike shed spaces are free whilst the lockers incur a charge.

Gosford Station (Burns Cres), Gosford

Shed spaces at this location

Total Spaces: 38

- Horizontal Rack Spaces: 8
- Wall Mounted Low Spaces: 14
- Wall Mounted High Spaces: 16

Located 50m from main entrance of Gosford Train Station, Burns Crescent.

[Link Opal Card](#)

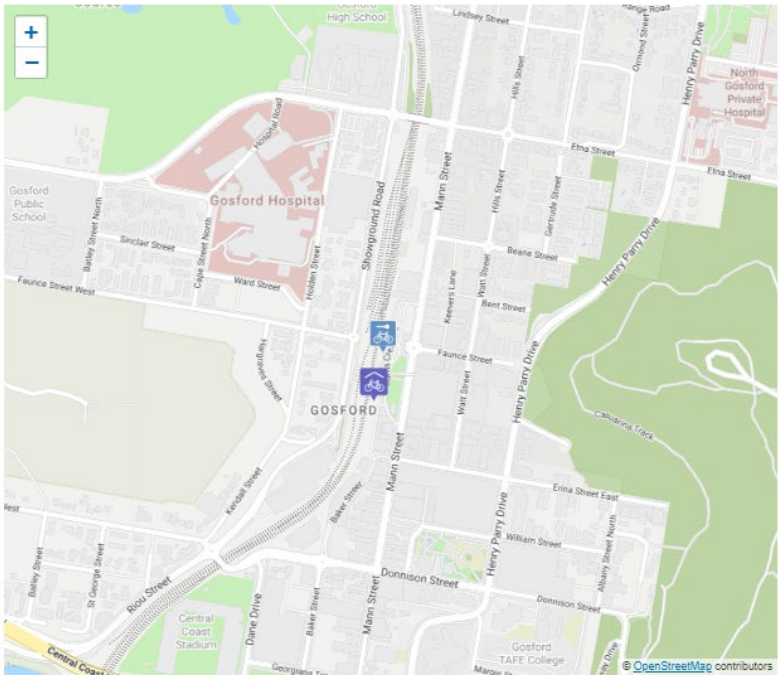
Lockers at this location

Total lockers: 8

Located on Burns Cres at bus shelter and approx 45m from station

Currently available: 6

[Hire Locker](#)



2.10 Other Proposed Developments

Gosford city centre is subject to a revitalisation effort supported by State and local government initiatives including the SEPP Gosford City Centre 2018.

It is anticipated that there shall be ongoing upgrades to the city centre and infill development including the subject site.

3 Proposed Development

3.1 Proposed Development

The Gosford Campus for the University of Newcastle will be the flagship for the CBD providing a vibrant hub for learning and community engagement. Located within the Gosford CBD within 250 metres of the Gosford railway station and bus interchange and 550 metres from the Gosford Hospital and the Central Coast Clinical School, the new campus will be conveniently located as an extension to the current health campus.

The Gosford campus provides the potential for 3500m² GFA of learning and community space with student number of 660 and up to 50 staff on site. The community engagement space would complement the learning spaces being primarily used during term break, of a weekend or evening when main campus demands are at their lowest. This may allow for up to 540 attendees across four levels.

As a driver to change for the Gosford City Centre the campus shall be aspirational in its design and its environmental credentials seeking a 6 green star rating. Critical to this is developing mode share targets that not only support the sustainable transport rating for the site but also the sustainable transport goals for the city. The targets for the campus will maximise active travel, recognising the city's location as a key public transport hub whilst the revitalisation of the Gosford City Centre will enable students and attendees of the campus to study, work and live within the city and its environs.

The inclusion of an Innovation Centre within the building allows for members to access the various start-up/business development spaces with the majority of these anticipated to be directly related to existing University clientele. There is also the potential to support local businesses in the wider start-up and entrepreneur community with accelerator and incubation programs available.

Start-ups traditionally develop their products and start their businesses whilst either at university or having just completed university. Many will work part time around developing their business or shall work full time and work on the start-up after hours. As such the need for a work space varies considerably around their time availability. The need to be located within a work space can be driven by the desire to be part of a collaborative work environment, it can be dictated by the need for high speed, quality internet facilities, for convenience and a space away from other distractions, or the need to have a formal work environment to support the development and application of a start-up process. Access to mentors, courses and facilitators can also determine the location chosen by start-up founders. This is consistent with a survey of users of the University of Newcastle's small site incubator (Three76 Hub) which showed that the frequency of use by attendees of the facility is less than 3 days per week.

The start-up demographic (20-34 years of age) and the flexibility required by Start-Ups means that the Innovation Centre will rarely be fully utilised at any given point in time but rather people will come and go throughout a week and across a 24 hour day as necessary. The Innovation Centre will provide a convenient workplace for this cohort and appeal to those who live in or close to Gosford or who rely on public transportation to connect work with home.

3.2 Access

The concept allows for activation of the Mann Street and Beane Street frontages with a focus on public domain and pedestrian access. Vehicle access to the carpark is planned from Hills Street whilst service access is via a one way entry off Mann Street with the exit off Hills Street.

Access to bus services and heavy rail are than 250 metres to the south of the site at the Gosford Transport Interchange.

The site is also conveniently located to the Gosford Hospital where the UoN already has a presence.

3.3 Site Servicing

Servicing of the site will not be significant with service vehicles typically being waste vehicles (anticipated to be twice per week) and delivery vehicles associated with the café and occasional deliveries to the campus being generally small vans e.g. Hi-Ace and i-load. Access may however be required for occasional larger vehicles. Based on arrangements at NUSpace and Q Building in Newcastle the servicing demands are likely to only be 1 or 2 trucks requiring access each day. The majority of deliveries are received at the Ourimbah Campus to then be delivered as required to the subject site.

A service access and “laneway” is therefore proposed through the site. Entry off Mann Street and exit to Hills Street will allow these vehicles to enter and exit the site in a forward direction, maximising the space within the site. The entry at Mann Street will also ensure maximum visibility to pedestrians rather than exiting in this location. Having the one-way route through the site shall minimise the footprint required for this service area, as turning a vehicle around within the site can have a significant impact upon the development footprint. The access and servicing laneway has been designed to allow for left turns into the site by a Heavy Rigid Vehicle to the exit onto Hills Street. **(Appendix A).**

A service area layout within the site will enable service vehicles to pull off the laneway to undertake deliveries or waste collection.

3.3.1 Access to Public Transport

The site is well serviced by public transport as well as having good pedestrian and cycling connectivity.

The Gosford transport interchange provides access to train options between the City and south towards Hornsby and Sydney and north towards Wyong and Newcastle.

Bus services from the interchange provide excellent transport opportunities for people living within the broader Central Coast area.

3.4 Parking

3.4.1 Proposed Supply

The subject site is to be developed as part of the revitalisation of Gosford and forms part of the University of Newcastle's plans to extend its presence in the Gosford city centre. The development draws on the plans for the long-term redevelopment of Gosford. Located as it is within such close proximity to public transport as well as Gosford Hospital and surrounded by housing, the proposed development allows for active transport and trip containment within the city centre by providing services and facilities.

The proposed parking supply of 24 spaces takes into consideration the mode share targets determined for the site and shall be designed to achieve a Green Star Rating for the development. It will provide bicycle facilities, accessible parking provision, EV parking and a loading area within the site. Public domain upgrades and drop off zones along the street frontages will see an improvement to the existing situation. It will not provide general parking.

3.4.2 Council code and local parking policies and plans

The SEPP Gosford City Centre 2018 provides a parking rate of 1 space per 75m² for commercial activities and 1 space per 4m² for retail activities.

The Gosford City Centre DCP 2018 provides the following for Educational Establishments:

Car parking: 1 space per 2 staff and 1 space per 30 students

Motorcycle parking: 1 space/25 car spaces or part thereof

Bicycle parking: 1 space/5 students above Grade 4

3.4.3 Pedestrian and Bicycle Facilities

The site connects with existing pedestrian facilities and provides activated site frontages to engage the community with the broader space. As a city campus the site benefits from the existing pedestrian network that supports the majority of streets and roads throughout Gosford.

Austrorads Guide to Road Design Part 6A: Pedestrian and Cyclist Paths provide guidelines on the widths of pedestrian facilities to accommodate pedestrian demands (Figure 3-1).

Table 6.1: Width requirements for footpaths

Situation	Desired width (m)	Comments
General low demand	1.2 to 1.0 (absolute minimum)	General minimum is 1.2 m for most roads and streets. Clear width required for one wheelchair. Not adequate for commercial or shopping environments.
High pedestrian volumes	2.4 m (or higher based on demand)	Generally commercial and shopping areas.
For wheelchairs to pass	1.8 to 1.5 (desired minimum)	Allow for two wheelchairs to pass (1.8 m comfortable, 1.5 m minimum) Narrower width (1.2 m) can be tolerated for short distances.
For people with other disabilities	1.8 to 1.0	

Notes:

Whilst the minimum width may be used where demand is low it is generally desirable to provide a path that will accommodate two pedestrians side by side.

Wider than the minimum width (e.g. up to 5 m) may also be necessary at locations where pedestrian flows are high or where pedestrians gather such as in the vicinity of schools and associated road crossings, at recreation facilities and at important bus stops.

Where demand is significant it may be necessary to provide adequate congregation areas clear of the path required for through movement of pedestrians.

Figure 3-1 Austrorads Guide to Road Design Part 6A: Pedestrian and Cyclist Paths Table 6.1

Therefore, the pedestrian interface between the campus access points and the broader pedestrian network shall be designed to meet these guidelines.

The distribution of pedestrian traffic across various routes will see the impact of pedestrian volumes reduced. Pedestrians with a desire line to the Gosford transport interchange shall use the existing path network south along Mann Street.

Pedestrians with an origin/destination to the west towards the hospital will be able to use the existing pedestrian phases at the signal controlled intersection of Mann Street and Etna Street to then cross over the rail line using the footpath on the bridge.

Bicycle storage shall be provided to support this stage of the development. Shower facilities suitable for use by cyclists and walkers to the campus are to be provided.

4 Transportation Analysis

4.1 Policies to Support Mode Share Targets

Reviewing the objectives for B4 uses nominated in the SEPP the following is noted:

To provide a mixture of compatible land uses.

- To integrate suitable business, office, residential, retail and other development in accessible locations so as to maximise public transport patronage and encourage walking and cycling.
- To encourage a diverse and compatible range of activities, including commercial and retail development, cultural and entertainment facilities, tourism, leisure and recreation facilities, social, education and health services and higher density residential development.
- To create opportunities to improve the public domain and pedestrian links of Gosford City Centre.

The City Centre DCP 2018 notes:

- To facilitate an appropriate level of on-site parking provision in the city centre to cater for a mix of development types.
- To minimise the visual impact of on-site parking.
- To provide adequate space for parking and manoeuvring of vehicles (including service vehicles and bicycles).
- To promote Gosford City Centre as a more lively and vibrant place by providing parking incentives for certain developments in the city centre.
- To encourage economic growth in the city centre.
- To enable the conversion of above ground parking to other future uses.
- To recognise the complementary use and benefit of public transport and non-motorised modes of transport such as bicycles and walking.

4.2 Establishing Site Travel Mode Targets

Taking into consideration the concept for the campus the University aspires for all students to use public transport, walk (being accommodated within the CBD or surrounds or based already at the hospital) or to cycle. The proposed development is consistent with the on-going revitalisation of the Gosford City Centre and so must be assessed taking into consideration the future for this CBD.

Public Transport will provide the most practical active transport opportunity given the proximity of the site to train services and the bus interchange. Staff and students, whether travelling from within surrounding suburbs or from the broader areas of northern Sydney, Lake Macquarie and Newcastle will be able to rely upon convenient travel services given the significance of Gosford as a major public transport hub.

The CCDCP notes that AS 2890.13:2015 Parking Facilities suggests a 10% mode share is a reasonable starting point to accommodate cyclist trips in urban environments. The take up of e-bikes and scooters as they become more affordable reduces the barriers to ride to the CBD, allowing for existing pathways to be used, connecting along quieter local streets. Cycling within a 5km distance from Gosford is to be encouraged.

As part of the revitalisation of Gosford City Centre it is expected that there shall be an increase in affordable and student housing over time to support the demand generated by the University's presence. This, coupled with the new campus creating the potential for an extension of the health precinct, will see both staff and students able to walk to the subject site being based or living within a walking distance (2kms based on the Walking Communities Program).

Table 4-1 Mode Share Targets

Travel mode	Target Percentage	Targeted Patrons	Assume 700 (657 students/50 staff) being 75% attendance at peak load
Public Transport	55%	All attendees	385
Cycling	7.5%	Staff and other attendees	4
	10%	Students	65
Walking	30%	Primarily students including those based at the hospital and so walking across to the campus. Includes those resident in the surrounding area within 2 kms of the city centre	210
Driving	5%	Focused as being staff with some external demands	35

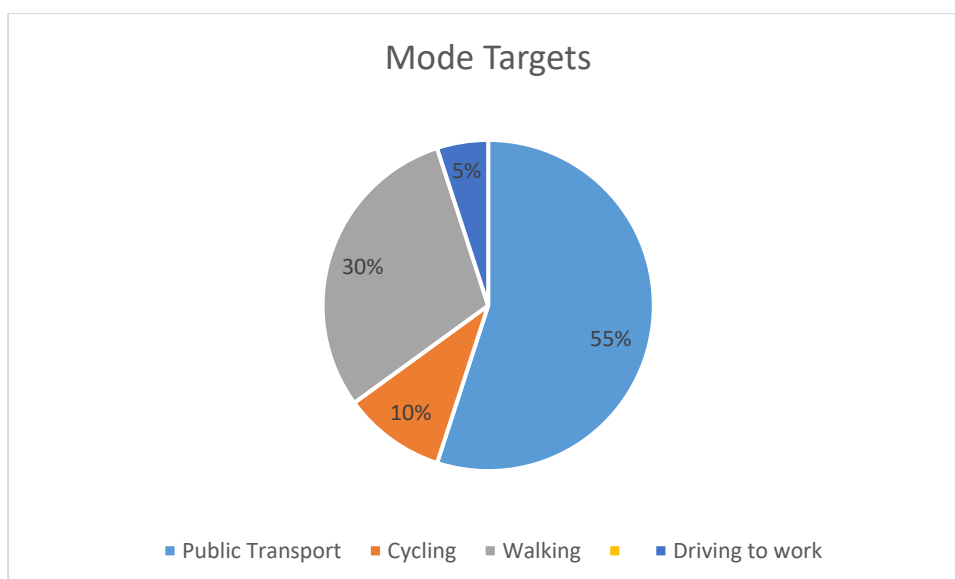


Figure 4-1 Mode targets for combined staff and students

Given that hybrid working arrangements established by the University allow staff to work away from the campus 40% of the time this would equate to an average of 30 staff on site. The provision of parking as proposed would enable parking on site for 80% of this attendance, requiring 20% of staff to use alternate travel modes. This is consistent with existing journey to work data for the LGA without any improvement in mode share.

The provision of 24 parking spaces is in the order of 1 space per 2 staff on site and is consistent with the DCP on the basis that no students are encouraged to drive nor provided with parking.

To encourage staff to use alternate modes of travel a Workplace/Green Travel Plan shall be developed to outline actions to support the Greenstar aspirations of the site.

4.3 Traffic Generation

The proposed development will generate minimal additional vehicle traffic however will see an increase demand for pedestrians, cyclists and public transport use. Such demands are consistent with the Central Coast Regional Transport Plan with the activation of the CBD fundamental to the revitalisation of the City.

The vehicle demands associated with the Gosford Campus Stage 1 will include some demands for the pick up and drop off of people as well as for those staff or students requiring accessible parking and those staff driving to work. Based on the above demands, the vehicle traffic generated by the subject site are determined as being in the order of up to 35 trips in the AM peak and less in the PM peak (based on 5% on site driving). This is considered to be less than that previously associated with the site as a hardware store which had ongoing demands coming and going throughout the day.

As per Table 4-1 the mode share indicates up to 385 patrons using public transport. The type of transport will depend upon their location with those living to the north and south of Gosford likely to use train services whilst those living throughout the Central Coast LGA also have access to a broad range of bus services. The trains and buses that service the area have capacity to accommodate these additional demands.

4.4 Site Servicing

As detailed above the servicing for the site shall include waste management with some demands for deliveries and servicing/maintenance of equipment and facilities by contractors. There may be further demands associated with retail deliveries (café) etc.

Many of these services are provided in conjunction with other sites throughout the City e.g. waste collection, parcel deliveries, facility servicing and as such don't generate additional traffic demands but rather become part of a shared trip.

Such servicing is consistent with the permitted uses for the site and would be less than those associated with products being delivered to the site as a large hardware store. Given the size of this development such servicing requirements shall be minimal and acceptable.

The impact of these occasional deliveries to the site will see some demands for trucks turning into the site from Mann Street. The majority of these are expected to approach from the north and undertake a left turn into the site. Exits onto Hills Street may be to either the north or south with visibility at this access consistent with the past arrangements along this frontage.

4.5 Traffic Impact Assessment

Given that much of the site has been previously operated as a retail outlet allowing for the traffic previously generated in conjunction with this the future traffic flows associated with the site will be less than that historically provided for across the site.

The mode share target allowing 5% of occupants on site to drive, and the provision of 24 parking spaces on site, will see up to 35 trips generated by the site in the AM peak. 24 of these would approach along Hills Street, with a split 60/40 consistent with the AM flows on Mann Street. Two way flows north of the site could increase by 14 trips in the AM peak with 10 trips approaching from the south.

The demand for 14 right turns into the site will have a minimal impact on the operation of the access with minimal queuing given the low flows along this road.

In the PM peak demands are expected to be less given that exiting demands are spread across the afternoon.

Additional trips shall be distributed across the broader road network with the grid patterns of roads providing various routes depending upon the origin/destination of trips (Figure 4-2). This distribution reduces the impact at any one intersection with the main intersections being the 4 way roundabouts at Hills Street/Etna Road (14 trips) and Hills Street/Beane Street (10 trips). The impact of these additional trips will be minimal and well within the capacity of these roundabouts.



Figure 4-2 Traffic distribution to the broader network

The impact of this vehicle traffic on the local road network is therefore considered acceptable. The cumulative impact is less than historically occurred in conjunction with the site as a hardware store. The distribution of the traffic across various routes will have a minimal impact (5 vph) on the local road network and various intersections.

4.6 Pedestrian Movements

Pedestrian access to the site will be available using the local pedestrian network throughout the city. The proposed development will see an increase in pedestrian traffic within the vicinity of the site, primarily along Mann Street towards the transport interchange and along local streets associated with residential demands. The high standard of footpaths between the site and the train / bus station is good and wide and therefore has capacity to cater for these pedestrian demands.

Safe pedestrian connections are available along key routes with pedestrian refuges provided mid-block on Hills Street, a raised pedestrian walkway near the station and pedestrian phases on the intersection of Mann Street and Etna Street. This pedestrian infrastructure is appropriate for these additional pedestrian demands.

4.7 Cycling Movements

The proposed development will encourage cycling by its occupants with the provision of suitable bike storage and access to end of trip facilities. Ongoing reviews of the bicycle network has been detailed in the Central Coast Bike Plan and in conjunction with opportunities in association with the Central Coast Regional Transport Plan can allow for the increased demand for cycling within a 5km radius of Gosford as a major transport hub.

4.8 Impact on Road Safety

The additional traffic flows associated with the development of the subject site will have a minimal impact upon traffic safety. Increases in pedestrian and cycling traffic are within the capacity of the local facilities.

4.9 Impact of Construction Traffic

The construction work shall require a number of trucks, to deliver materials including concrete to the site.

Stage 1 is consistent with other developments in the City and will occur over a number of months as the site is developed. A draft CTPMP shall be prepared to support this assessment and to provide guidance for the future contractors.

The size of the lot for Stage 1 shall see much of the construction zone contained within the site. Work zones on the adjoining roads may be required during specific elements.

All works on site will be governed by the relevant EP&A rules and as stipulated within any development consent granted. This will include hours of work.

4.10 Public Transport

4.10.1 Options for improving services

A demand for public transport will be generated by the new site proposal. This demand is accommodated within the ongoing desire of the State government for more people to use public transport in lieu of car travel for access to the Gosford CBD.

The impact of this development is well within the capacity of these services.

4.10.2 Pedestrian Access to Bus Stops and Transport Services

Pedestrian access is available to the Gosford station and bus interchange along existing pathways.

4.11 Evaluation

The demands associated with additional traffic will be minimal. Pedestrians and cyclists can be accommodated within existing facilities in the CBD and the public transport is adequate for the future public transport demands of the site.

5 Measures to promote Active Travel choices

5.1 Promotion of quality pedestrian routes

The CBD is supported by an historic network of good quality pedestrian pathways, generally provided along both sides of the roads. As Gosford is revitalised the ongoing development of quality pedestrian routes with adequate pathways, activity nodes, weather protection, lighting and security will occur.

5.2 Transport Management Strategy

The mode split being adopted for the Campus is a result of the application of the various key Council and State strategies and the aspirational sustainable goals for the subject site. To ensure these are adopted by staff and students a Travel Demand Management Strategy will be developed that actively encourages behaviour change and a shift away from travel by private vehicle. The implementation and monitoring of this strategy shall be overseen by the University through its facility management services.

This strategy would include the following.

Education and awareness programs

Particularly focussing on the move to and the excitement of the new campus for students and staff. These programs can build on the existing University web site for off-campus accommodation and travel options to the City campuses. They importantly focus on the message that being a student in Gosford means you don't need a car.

Include attendance during orientation of representatives from Transport for NSW and local bus providers to promote public transport and active transport options for staff and students. Also include representatives from other transport mode providers as appropriate such as Go Get, Uber, bicycle rider groups.

Promote and develop Ride to Campus and Walk to Campus days, cycling buddies etc.

Workplace travel plan

A Workplace Travel Plan (WTP) will be developed for the site to influence mode shift for staff attending the new campus. The WTP will include information on available travel options including public transport, walking and cycling. There will also be ongoing development of programs that support a shift to public transport, active transport and park and ride options for all staff and students.

University travel plan

Travel Access Guides (TAGs) for students are regularly updated to allow for current travel opportunities to the University's campuses. They will be updated to provide information on access to the GCCD but also provide information on inter-campus travel to Ourimbah and other relevant transport information if appropriate.

The travel plan as part of the University web site may include information about adopting technology as a commuter, information from Transport NSW, trip planning, walking and cycling apps, bike routes and bike user groups (BUGs) as well as relevant car sharing schemes, online shopping and local grocery delivery options.

The following provides examples of actions that may be considered appropriate for the Campus and may be included in a workplace and campus travel plan.

Active Transport

1. Introduce the role of Transport Coordinator to oversee the implementation and management of the Workplace and Active Travel Plan.
2. Maintain Travel Access Guides to include the Gosford Campus
3. Provide specific information for attendees at Gosford to access railways station and campus bicycle storage.

4. Educate all staff about their travel choices and provide an information pack to encourage active transport and shared travel as part of the staff induction procedure. Include accommodation, local public transport, walking and cycling information.
5. Encourage shared travel across the various Faculties, including those based at Gosford Hospital to maximise travel options.
6. Provide participants with information that makes their travel choices easy to make.

Bicycle and Pedestrian Travel

1. Ensure that those who are intending to ride are well supported including allocation of lockers, provision of route information, secure and easy to access bike storage, end of trip facilities.
2. Promote riding and walking to Uni during orientation.
3. Promote riding buddy groups and Bike User Groups (BUGs).
4. Promote use of E-bikes for easier travel.
5. Promote specific Ride to Work/Uni days.
6. Install NSW Transport Cycling trip planners on staff and student workstations.
7. Promote the benefits of walking and cycling to all staff and student that live between 2 and 5 kms of the campus.

Public Transport

1. Ensure students and staff who are open to travelling by public transport have sufficient information and support for this to be a positive experience. Deal with any problems that arise to assist them trying public transport travel again.
2. Add up to date travel information and trip planning to individual workstations and intranet.
3. Investigate technology implemented by Transport for NSW and incorporate into staff and student information at the time of occupancy
4. Provide information about public transport to new staff and students as part of the induction/orientation program.
5. Investigate the feasibility for staff to purchase tickets and passes through payroll deductions.
6. Ensure ticketing for public transport is readily available and staff and students are aware of how to access ticketing.

Events

1. Develop an Event Management Plan to provide for larger events at the site
2. Investigate use of the Ourimbah Shuttle to provide for inter-campus travel for guests if appropriate. Include information on parking at Ourimbah to use the shuttle.

Hybrid Working/Telecommuting

1. Support hybrid working for staff who do not need to attend the campus to reduce demands on private vehicle usage.
2. Encourage online meetings (Teams/Zoom etc) to avoid the need for travel for face to face attendance

Parking Policy

1. Implement parking policy which supports the Gosford Campus Travel Mode targets.

5.3 Quality End of Trip Facilities for walking and cycling

The inclusion of quality end of trip facilities including access to showers and bike storage has been incorporated into the plans for the site.

6 Summary and Recommendations

6.1 Summary

The GCCD Stage 1 represents the introduction of a city based campus for the University to expand on its presence near the Gosford Hospital.

The site previously operated as a Mitre 10 Hardware store with associated delivery and traffic movements.

The GCCD Transport Access Strategy, has been developed applying the earlier analysis undertaken for Honeysuckle Campus and NU pace and assessed against current data and transport trends. It has also taken into consideration the latest government strategies and benchmarked against City based university developments such as University of Technology Sydney (UTS) and University of NSW (UNSW).

This strategy has developed travel mode targets and a parking strategy to support alternate travel modes to the campus.

An assessment of the site demonstrates that it is well located to benefit from the extensive transport network with the Gosford railway station and bus interchange within 250 metres of the site. It is also well connected to the CBD and surrounds enabling people to walk and cycle to the campus and therefore not be reliant on private car usage.

The provision of 24 parking spaces on site equates to a rate of 1 parking space per 2 staff, given that projected staff and innovation centre demands are 40-50 people. There is no parking proposed on site for students. The parking supply does include accessible spaces however. This parking is consistent with the DCP requirement for staff.

Bike storage and end of trip facilities, including casual bike storage for visitors to the site, provide for the mode share targets.

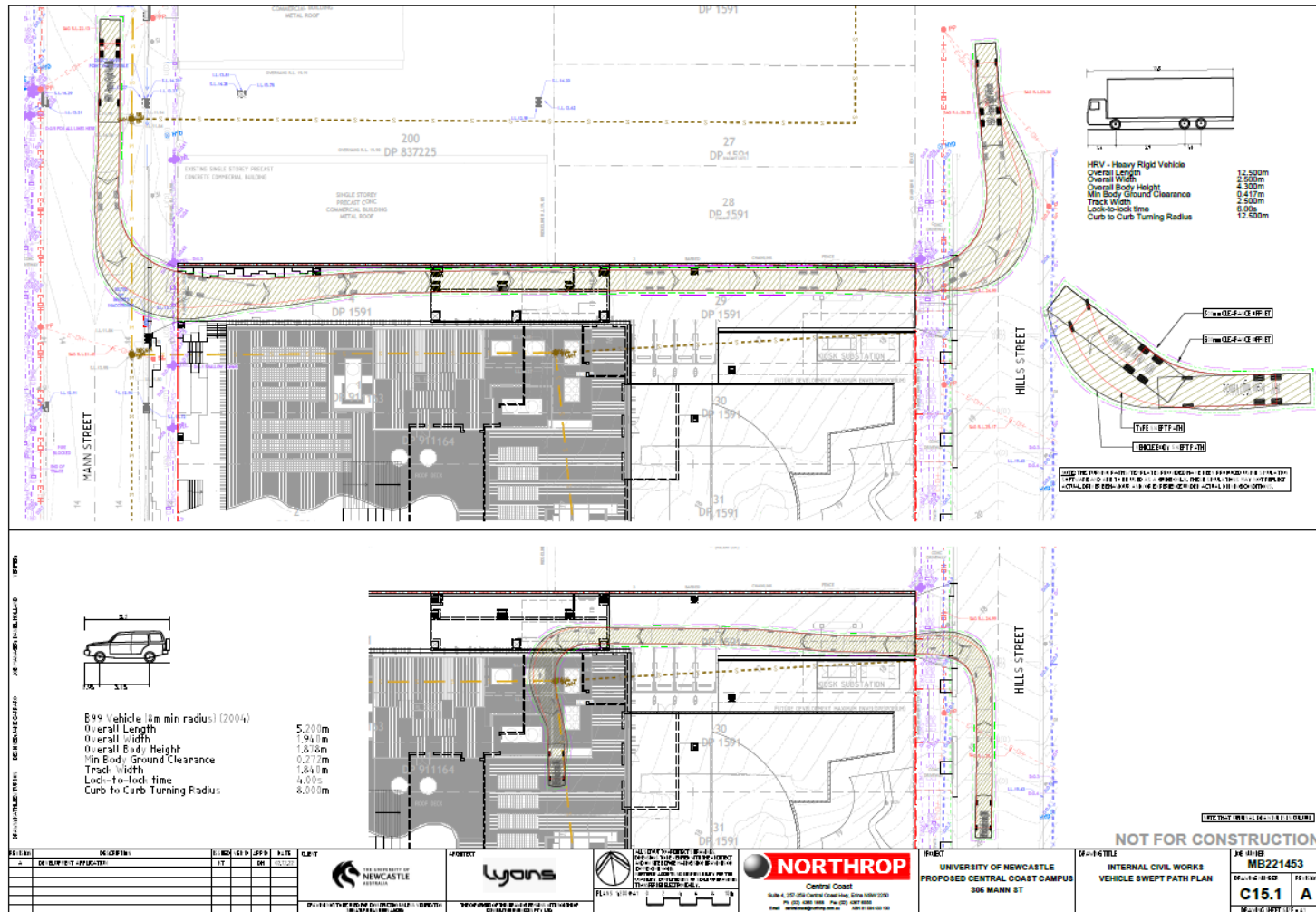
6.2 Recommendations

To meet the active travel targets for the site promotion of active and public transport options relevant to the end users should be undertaken. This information can be promoted by encouraging campus users to access Active Travel information from the University web site.

The overall conclusion from the investigations is that traffic and parking arrangements for Stage 1 are consistent with State and Local Government strategies and support the intent to revitalise Gosford City Centre. The proposed access and service parking is satisfactory and there is no traffic or parking impediment to this stage of the development.

The low number of vehicle trips associated with the development given the mode target and associated with the low on-site parking provision will have minimal traffic impacts with no requirement for any traffic modelling nor road infrastructure upgrades to maintain the existing performance standards on the road network.

Appendix A – Swept Paths



Gosford City Campus Development

University of Newcastle

Green Travel Plan

December 2022

Gosford City Campus Development

305 Mann Street, Gosford

Green Travel Plan

Author: Cathy Thomas

Client: University of Newcastle

Issue: Ver01

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1 Purpose of Report and Study Objectives

1.1 Background

Seca Solution Pty Ltd has been commissioned by Lyons on behalf of the University of Newcastle to prepare a Green Travel Plan for Stage 1 of the proposed Gosford City Campus Development (GCCD) located on the corner of Mann Street and Beane Street in the Gosford CBD. The Gosford City Campus Development Green Travel Plan has been prepared to meet the SEARS requirements of the Department of Planning although at the time of writing the project was not yet be finalised nor approved. This Green Travel Plan has therefore been prepared to demonstrate the supporting measures appropriate for the project and will be subject to review prior to occupation.

A Green Travel Plan is seen as a way of supporting active travel, making it easier for employees (and students) to get to and from the workplace and to reduce dependence on private vehicles and parking space.

“A travel plan typically includes support for walking, cycling, public transport and car sharing reinforced with promotion and incentive and the management of workplace parking.”

Premier's Council for Active Living New South Wales (PCAL)

Active Workplaces are identified by the PCAL as a means by which workplace health and wellbeing can be promoted and supported. Investing in workplace health promotion (such as physical activity programs) has the potential to increase economic return for employers through enhanced worker productivity, reduced absenteeism and improved corporate image. (PANORG (2009) *Evidence module: Workplace physical activity and nutrition interventions.*)

The PCAL outlines Travel Plans as a “business management tool designed to address an organisation's travel needs and impacts. It can deliver efficiencies, savings and benefits to an organisation, its operation and its employees. A Green Travel Plan can include promotion of ‘sustainable’ travel choices such as walking, cycling, using public transport and car-sharing, as well as reducing the need to travel by encouraging the use of video-conferencing and remote working. This will be reinforced with promotion and incentives and by the management of workplace parking.”

1.1.1 Spheres of Influence

The areas which may be influenced by the implementation of a travel plan include:

- Reduction in parking demand, its associated cost of provision and in turn the cost to employees for parking usage
- Reduction in private motor vehicle travel by individuals, the reduced impact on the road network and associated environmental costs and costs to the employee
- Increased walking, cycling and public transport use and its resulting increase in physical exercise and health benefits
- Parking policy, covering parking pricing and supply

1.2 Scope of Report

The plan has been developed in conjunction with the University of Newcastle representatives to support a 6 Greenstar rating for the future development. The various tasks identified and completed have included:

1. Review of the sustainability goals of the University and consideration for the travel needs for proposed end users including staff, students and the general community, to assist in developing an appropriate set of active travel options. This included confirmation that the University supports a hybrid work arrangement with staff able to work away from the campus up to 2 days per week, giving a 40% reduction in personal travel requirements accordingly.
2. Review of the Transport and Parking Assessment and the mode targets established for the project.

3. Consideration of the planned use for the site and consultation with the team to understand what facilities can be provided to support the mode targets.
4. A review was undertaken of the transport options available to the site including public transport, pedestrian and cycling links in accessing Gosford city centre.
5. Opportunities for Smart Travel in the CBD have been considered. This includes the University carpooling App (Liftango) to assist staff, students and campus attendees who choose to travel together. Encouraging the use of such technology will improve the efficiency of travel and encourage non-singular car driving.
6. An action plan has been developed suitable for implementation to encourage the use of alternate travel options both arriving to and travelling from the site as well as travelling between the Gosford Hospital and Ourimbah Campus. This includes measures to encourage positive travel options when travelling to and from as well as between the study centres.
7. This action plan will enable the production of:
 - a. Active Travel Guide – an online suite of documents suitable for inclusion in new staff welcome packs, staff induction discussions, student induction information to promote active travel to GCCD outlining general public transport options and access to appropriate tools and Apps to support such travel. This shall include details of the bike hub and bike storage, walking groups, express shuttle, carpooling Apps and other measures promoting non-single car driving to the campus as appropriate at the time of occupancy.
 - b. Actions to provide suitable online promotion of active travel to staff and students through the University web presence including tools such as trip planner.
 - c. Other actions to promote mode change eg ride to work day, new bike rider support groups.
8. The final Workplace Travel Plan shall be a summary of the findings including the Action Plan suitable for implementation by the management team to meet the requirements of the authorities and providing forward planning for GCCD. It would be finalised in conjunction with the occupation certificate for the campus.

1.3 Issues and Objectives of the Active Travel Plan

The Parking and Transport Assessment prepared by Seca Solution (November 2022) detailed opportunities for active travel to support the parking strategy associated with the new campus. This strategy is based on measures to support travel to the campus by both staff and students by ways other than by single-driver vehicles.

The purpose of this plan is to inform the University of the status of transport opportunities to access Stage 1 of the new campus and to provide an action plan that can be implemented to support active transport.

1.4 Planning Context

In developing this study the following has been considered:

Workplace Travel Plans	Premiers Council for Active Living NSW
Guide to Traffic Management Park 11: Parking	Austroads Inc 2016
Austroads Guides to cycling (various)	Austroads
Guide to Road Design Part 6A: Pedestrian and Cycling Paths	Austroads Inc 2009
NSW Planning Guidelines for Walking and Cycling	

1.5 Methodology

The methodology applied to the development of this plan focussed on the following key questions:

1. What travel options are available in the local area?
2. What are the travel needs of the future staff and students, including inter-campus travel between Gosford CBD and Gosford Hospital and Ourimbah Campus?
3. How can campus attendees be supported and encouraged to utilise active travel measures over single car use?

2 Existing Transport Services and Facilities

2.1 Site Location

Located at the northern end of the Gosford City Centre, the design seeks to activate the Mann Street and Beane Street frontages as well as providing a vehicle access to Hills Street to the east of the site.

The subject site is surrounded by commercial and mixed-use development to the north and east along with residential development to the east. West of the site is the heavy rail line (Central Coast Newcastle Line) with the Gosford Hospital site to the west of this. South of the site is the main retail centre of Gosford as well as the Gosford railway station and bus interchange.

The location of the site is shown below in Figure 2-1.



Figure 2-1 Site Location (Source: Nearmaps)

2.2 Parking

2.2.1 On-street Parking Provision

Parking is generally available along the streets fronting the site with 1 or 2 hour parking restrictions Monday to Friday and Saturday mornings.

Parking controls on Beane Street include a No Parking zone except for buses.

2.2.2 Off-Street Parking Provision

Off-street parking is available to the public in the Gosford City Car Park at 1 Baker Street. This multi-deck carpark with 650 places is open Monday to Friday 6am to 8pm and Saturday 7.30am-3pm. It is also open to provide for local events at the Industree Group Stadium (Central Coast Stadium).

Off Street parking is provided for commuters at the Gosford Station carpark (1050 spaces) with public parking for shoppers within the city centre.

It is noted that historically many established developments throughout the City have not provided off-street parking and have been reliant upon public transport, public parking stations or on-street parking.

2.2.3 Park and Ride – Gosford Shuttle

The Gosford Shuttle, for use by staff and students, provides a shuttle service between the Ourimbah Campus and the Central Coast Clinical School (Gosford Hospital). The shuttle bus service operates Monday to Friday 7:30am - 10:30am and 3:30pm - 6:30pm between the two campuses enabling staff and students to either Park and Ride or to commute between the campuses as required throughout the day. There is no cost for this shuttle service with the parking managed in a manner consistent with the existing campus parking policy.

2.3 Train Travel

2.3.1 Range of services

Gosford is serviced by both intercity and regional train services provided by CityRail on the Central Coast Newcastle Line.

The Central Coast Newcastle Line connects the city with the northern parts of the Central Coast (Tuggerah, Wyong etc), the western side of Lake Macquarie through to Newcastle and south to Hornsby and Sydney.

2.3.2 Frequency of services

Train services run every hour during the morning and afternoon peak periods to Newcastle and more frequently to Sydney.

2.3.3 Connection to GCCD

The campus is within 250 metres walk of the Gosford railway station along Mann Street which forms the frontage to the campus. There is a pedestrian refuge on Mann Street as well as an overhead pedestrian bridge to provide access to the bus interchange.

2.4 Bus Travel

2.4.1 Range of services

There is an extensive range of bus services and routes operating through the Gosford CBD as shown below, utilising bus stops at the interchange or along Mann Street in the vicinity of the subject site Figure 2-3.

2.4.2 Frequency of services

As the hub for most bus services through the Central Coast, the CBD provides access to a wide range of bus services with high frequency reflecting its importance as a major transport interchange. Bus services are provided by a mixture of Busways, Red Bus Services and Coastliner.

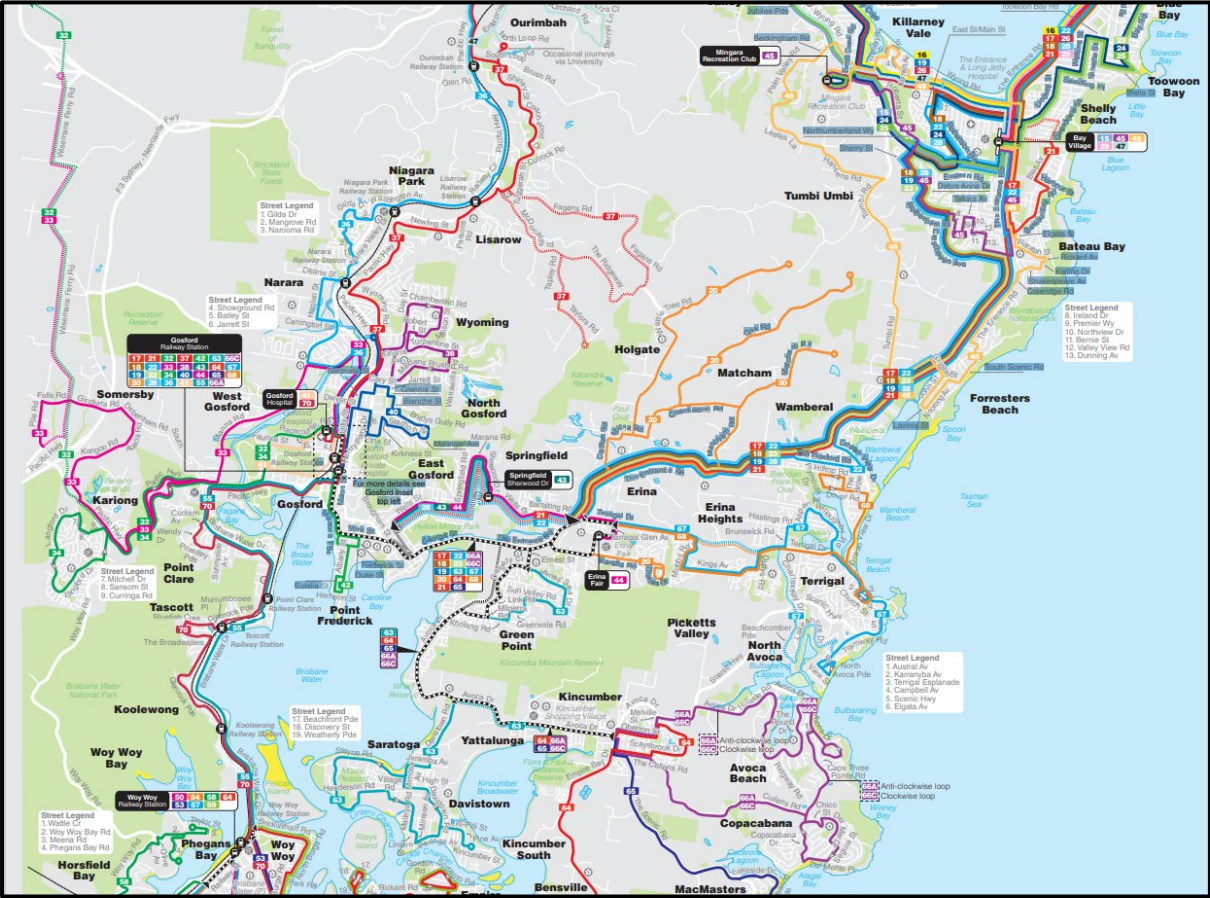


Figure 2-2 Network map showing extent of services operating from the Gosford CBD

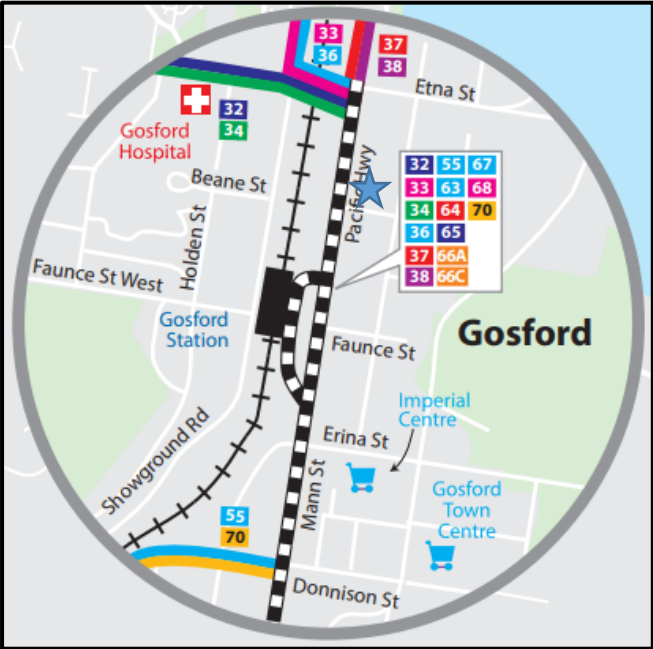


Figure 2-3 Busways transport services operating from the Gosford CBD (★ - subject site)

Gosford Station Public Transport Map



B	Stand A	28 The Entrance North	33 Somersby	66A Gosford via Avoca Beach
	Stop no. 225047		33/4 Gosford via Somersby Industrial Estate	66C Gosford via Copeland
	17 The Entrance North	Stand C	34 Gosford via Kariong	Stand K
	17X The Entrance	Stop no. 225045	34/2 Mangrove Mountain	Stop no. 225050
	18 The Entrance	40 Gosford via North Gosford		63 Gosford via Serravallo
	19 Wyong	43 Springfield	Stand G	Stand L
	21 The Entrance North	44 Erina	Stop no. 225041	Stop no. 225051
	22 The Entrance		55 Ettalong Beach	20 Gosford via Matcham
	23 The Entrance	Stand D	70 Ettalong Beach	42 Gosford via Point Frederick
	28 The Entrance North	Stop no. 225044	Stand H	Stand M
		38 Gosford via Wyong	Stop no. 225048	Stop no. 225052
	Stand B		67 Gosford via North Avoca	41 Gosford via West Gosford
	Stop no. 225046	Stand E	68 Gosford via Womboral	Stand N
	17 The Entrance North	Stop no. 225043		Stop no. 2250628
	17X The Entrance	36 Tuggerah	Stand J	Arrivals only
	18 The Entrance	37 Tuggerah	Stop no. 225049	
	19 Wyong		64 Woy Woy	
	21 The Entrance North	Stand F	65 Wagstaffe	
	22 The Entrance	Stop no. 225042		
	23 The Entrance	32 Spencer		

Going to the beach?

	22 Stand A and B
	23 Stand A and B
	Terrigal Beach
	67 Stand H
	68 Stand H
	The Entrance Beach
	21 Stand A and B
	22 Stand A and B
	23 Stand A and B
	Avoca Beach
	66A Stand J
	66C Stand J
	Ettalong Beach
	55 Stand G
	70 Stand G
	Forsters Beach
	19 Stand A and B
	21 Stand A and B
	Toowoona Bay Beach
	23 Stand A and B
	Wamberal Beach
	68 Stand H

For more information
transportnsw.info



Figure 2-4 Transport services operating from the Gosford Station

2.4.3 Bus Service providers

Busways

Email: info@busways.com.au

Website: www.busways.com.au

Red Bus Services

682A Coleridge Rd, Bateau Bay NSW 2261

Phone: [4332 8655](tel:43328655)

Website: www.redbus.com.au

Coastliner

157 Sparks Road, Warnervale 2259

Phone: 4392 3050

Website: www.coastliner.com.au

2.4.4 Bus Facilities

The Gosford interchange with extensive bus facilities including seats and shelters is located along Mann Street to the south of the site. There is also a bus stop on both sides of Mann Street north of the site.

2.4.5 Connection to GCCD

Footpaths are available along both sides of Mann Street connecting to the various bus stops. To the north the signalised intersection of Mann Street and Etna Street includes pedestrian crossing phases to allow for the safe crossing to the north bound bus stop. To the south there is a pedestrian refuge on Mann Street as well as an overhead pedestrian bridge to provide access to the bus interchange.

2.5 Taxi and Uber Services

Central Coast Taxis operate in the area 24 hours a day. Taxis can be booked by phoning 131 008. Online booking is also available as well as a Cab App.

Uber and similar ride share services are also available in Gosford.

2.6 Trip Planning

TfNSW provides a range of services to assist in planning bus and train travel throughout Gosford and the Central Coast.

Information can be sought online <https://transportnsw.info/trip/#/> but also by calling 131 500 and selecting option 2.

The online planner provides the commuter with a mobile friendly option with real time data. This means that one can determine which service is scheduled and when it will arrive. It also includes service alerts to advise when services are delayed. Next departure information and being able to use an interactive map all improve the public transport option for commuters.

There are a number of apps promoted for mobile devices and available through app stores.

<http://www.transportnsw.info/en/travelling-with-us/keep-updated/apps/real-time-transport.page?#services>

These apps allow commuters to track their service in real-time:

- Where a train and bus is now
- Train service updates such as cancellations and delays
- If selected train stations have a lift or escalator
- The closest bus stops and routes
- Estimated bus arrival times

2.7 Pedestrians

There is a well-developed network of footpaths in the locality, allowing for good connectivity to local attractions throughout the Gosford city centre.

2.8 Cycling

Whilst there are some shared pathways and identified cycling routes in the Central Coast LGA, there are also gaps in connections. Whilst quite streets allow for suitable riding options, the topography can create barriers for some riders. The uptake of e-bike and e-scooters is however overcoming this for many riders.

The Central Coast Bike Plan 2019-2029 has identified a series of prioritised routes including a focus on transport hubs which may over time see ongoing upgrades to the network surrounding Gosford.

Bike Storage is available at Gosford Station as well as other stations along the local route. The bike shed spaces are free whilst the lockers incur a charge.

Gosford Station (Burns Cres), Gosford

Shed spaces at this location

Total Spaces: 38

- Horizontal Rack Spaces: 8
- Wall Mounted Low Spaces: 14
- Wall Mounted High Spaces: 16

Located 50m from main entrance of Gosford Train Station, Burns Crescent.

[Link Opal Card](#)

Lockers at this location

Total lockers: 8

Located on Burns Cres at bus shelter and approx 45m from station

Currently available: 6

[Hire Locker](#)

The RMS web site has a Cycleway Finder tool which enable cyclists to nominate their location and they will be provided various routes within the vicinity. The route information then includes degree of difficulty, lighting, conditions etc.

[Cycleway Finder \(nsw.gov.au\)](https://www.nsw.gov.au/cycleway-finder)

3 Future Travel Demands

The GCCD campus has been designed with the future needs of the staff, student and Innovation Centre cohort in mind. As Gosford is redeveloped it is anticipated that future accommodation suitable for staff and student demands will evolve within Gosford.

3.1 Staff and Student Travel

Taking into consideration the concept for the campus the University aspires for all students to use public transport, walk (being accommodated within the CBD or surrounds or based already at the hospital) or to cycle.

Public Transport will provide the most practical active transport opportunity given the proximity of the site to train services and the bus interchange. Staff and students, whether travelling from within surrounding suburbs or from the broader areas of northern Sydney, Lake Macquarie and Newcastle will be able to rely upon convenient regular travel services given the significance of Gosford as a major public transport hub.

On this basis 55% of all attendees may travel by train and bus services to access the site.

Hybrid working arrangements established by the University allow staff to work away from the campus 40% of the time and the popularity of online course attendance sees students attending campus less, particularly if there is only one class on a particular day.

Given the proximity to Gosford Hospital and the Central Coast Clinical School it is anticipated that the new campus will extend on this presence with a high number of students and staff travelling between the two. The hospital is within 550m walking distance of the subject site, reflected in the 30% of students and staff who may walk between the two or walk to the campus being based within 2 kilometres of the campus.

The proposed travel modes for staff and students are detailed below in Table 3-1.

Table 3-1 Travel mode targets for GCCD

Travel mode	Target Percentage	Targeted Patrons	Assume 700 (657 students/50 staff) being 75% attendance at peak load*
Public Transport	55%	All attendees	385
Cycling	7.5%	Staff and other attendees	4
	10%	Students	65
Walking	30%	Primarily students including those based at the hospital and so walking across to the campus. Includes those resident in the surrounding area within 2 kms of the city centre	210
Driving	5%	Focused as being staff with some external demands	35

*No reduction for hybrid working or learning

3.2 Inter campus Travel

The potential for some students to travel between Ourimbah and the Gosford campuses can be supported by use of the Gosford Shuttle, with students then walking across to the new site or the shuttle service may be extended to include a drop off/pick up at GCCD.

3.3 Innovation Centre Travel

The inclusion of an Innovation Centre within the Stage 1 building supports various start-up/business development spaces. Of these 30% are anticipated to be directly related to existing University clientele with the balance being available to the wider start-up and entrepreneur community.

The startup and innovation community have a unique demographic. Reviewing start-up programs (primarily overseas) eg Y Combinator, an elite business accelerator associated with Stanford University, shows that the average age of the entrepreneurs funded is 26 often being those people who have completed or are completing their tertiary studies. The flexibility required by Start-Ups means that the Innovation Centre space will rarely be fully utilised at any given point in time but rather people will come and go throughout a week and across a 24 hour day as necessary. The Innovation Centre will provide a convenient workplace for this cohort who can be based in Gosford and so won't need to travel by car but rather can walk, cycle, uber (or similar) or use public transport.

Of the 30% of users already associated with the University this additional work space is ancillary to their other roles within the University. As they are already based in the city, they create no additional traffic demands.

Other users of the Innovation Centre may include the broader community who will have access to space, designed to encourage community engagement. The inclusion of a café on the lower level provides for people working within the start-up space, attending the campus but also promotes engagement with people passing by, encouraging them to enter the ground floor and immerse themselves in the facility. These people will be passers-by or may be local business people or residents of the city who would use the space to meet. Apart from the employees associated with the café, who again may live in the city, this space will not generate traffic or parking demands in its own right.

4 Transportation Analysis

With regards to the GCCD campus the primary spheres of influence include:

- **Hybrid Working**—support staff and students choosing to work or study off site through the use of technical and online services.
- **Bus Travel** – ensure all students and staff who are open to using public transport are supported in this choice. Gosford interchange provides quality bus connections and so should provide an effective transport option for many staff and students not living with walking distance of GCCD.
- **Train Travel** – ensure that staff and student understand that it is a viable option to travel to Gosford by train with the campus being a comfortable walk from the station.
- **Inter campus Shuttle** – currently provided for staff and students who need to be able to travel conveniently between Ourimbah and Gosford Hospital this service will provide a transport option for staff and students living within the vicinity of Ourimbah to transfer to GCCD by the shuttle.
- **Park and Ride** – run in conjunction with the inter campus shuttle. This will enable staff and campus attendees to park at Ourimbah reducing pressure on CBD parking and the local road network. This facility is convenient with the shuttle bus operating in peak morning and afternoon periods.
- **Car Pooling** – reduce number of individual private car drivers by encouraging carpooling, both to and from work and the campus.
- Ensure staff who indicate that they are prepared to **walk or cycle** are supported in this choice. The provision of bike parking, showers and lockers should be promoted throughout the year.
- **Work related travel** – reduce dependence on private car travel.
- **Parking policy** – ensure it supports alternative transport options.

4.1 Opportunities to reduce commuter car dependency

4.1.1 Current users of public transport

Staff who currently utilise public transport as part of their journey to work should be encouraged to continue to do so. These employees are already open to public transport and if there is a way to encourage them to continue to travel by public transport this should be investigated.

Ensuring staff who believe they will travel by public transport have sufficient information and support for this to be a positive experience is important. Should their first day of travel not be a positive one then their problems should ideally be dealt with as best as possible to encourage them to travel by public transport again. If this second journey is a positive one then these staff are more likely to continue to travel by public transport and become advocates for this mode of travel.

By providing easy connection to updates on public transport and traffic information staff will have confidence in relying on public transport. Adding the Transport Info Trip Planner to the GCCD website gives access to up-to-date public transport trip planning information. This supports everyone in their trip planning and promotes public transport use to all.

Representatives from TfNSW could be invited to attend campus during orientation week to educate and encourage the use of public and active transport.

4.1.2 Park and Ride

The Gosford Shuttle provides the opportunity for connection between Ourimbah and the city campuses and could allow drivers living in the suburbs within the vicinity of Ourimbah a viable alternative to travel to the city as a private vehicle user.

4.1.3 Car Pooling

Formal carpooling programs are effectively run by organisations throughout NSW including the University of Newcastle. This can provide a practical alternative to being a single commuter driving daily. Promoting carpooling, reduces the demand for single car drivers. Liftango, a university supported car pooling app is available for use by staff and students.

4.1.4 Walking and Cycling

Pedestrian access to the site will be available using the local pedestrian network throughout the city. Mann Street has wide footpaths suitable for these additional demands connecting the site to the transport interchange whilst footpaths on local streets connect with various residential areas.

Safe pedestrian connections are available along key routes with pedestrian refuges provided mid-block on Hills Street, a raised pedestrian walkway near the station and pedestrian phases on the intersection of Mann Street and Etna Street. This pedestrian infrastructure is appropriate for these additional pedestrian demands.

The proposed development will encourage cycling by its occupants with the provision of suitable bike storage and access to end of trip facilities. Ongoing reviews of the bicycle network has been detailed in the Central Coast Bike Plan and in conjunction with opportunities in association with the Central Coast Regional Transport Plan can allow for the increased demand for cycling within a 5km radius of Gosford as a major transport hub.

4.1.5 Hybrid Working and Telecommuting

Telecommuting and the resulting opportunities for hybrid working reduce travel demands significantly with a 20-40% reduction in on site attendance.

4.1.6 Reduce need for private vehicles for work-day travel

Although staff may perceive the need to travel for work related trips by private vehicle it is important that staff see the opportunity to utilise an alternative to their own personal vehicle, thus enabling them to travel to GCCD by alternate modes. Although there may be a preference for using their own vehicle, this preference may be based on financial and convenience reasons but doesn't necessarily consider aspects such as the impact on private vehicle insurance being used for business purposes, OHS policies and the need to carry work related equipment etc in private vehicles.

Inter campus travel between GCCD and the other University campuses may create a perceived demand for private car travel. These trips are opportunities to carpool with other members of staff if essential. The use of teleconferencing has the opportunity to reduce the demand for many face to face meetings.

A share carpool provides opportunities to reduce the dependence on single driver private vehicles for trips to other sites. This could be managed through the use of the existing fleet of staff access vehicles or could be provided through private contractors (GoGet and similar car share systems) or taxis.

4.1.7 Parking Policy

The lack of parking provided for the GCCD has been a conscious effort to support the revitalisation of Gosford City Centre and to support public transport use into the city. For many the choice is determined by various factors not least of which is the cost and availability of parking. To this end the parking strategy for the campus is a crucial factor in ensuring the provision of parking is managed and that alternative travel choices are considered by all campus attendees.

The Ourimbah campus parking policy will also impact GCCD. Whilst it is more cost effective to use the Gosford Shuttle compared with the price and availability of parking in Gosford City Centre the Shuttle service will appeal and be utilised. Similarly, the management of parking supply for carpooling will also encourage use of this travel option.

4.2 Long Term opportunities for improvement to car dependency

The desire for the campus to be located within the Gosford City Centre, where it can be a driver of change reconnecting the city centre with public transport and an active and vibrant city is expected to occur over a period of time. Opportunities exist for further improvements however reflect strategic changes, changes to regional infrastructure and relationships with third parties of which the University has little direct control.

It is recommended that during the initial period this plan be monitored and that the various actions be reviewed depending upon the end users for the campus. Demands for the shuttle service will require ongoing consideration to maximise its effectiveness.

Increased housing within the 2 kilometre walking distance and improvements to cycling facilities within 5 kilometres will increase opportunities for active travel and to support a shift in other forms of transport.

It is recommended that the implementation and management of this travel plan be overseen by an individual to take on the role of Transport Coordinator. This will ensure the timely role out of the policy as well as its ongoing evaluation.

5 Active Travel Plan Recommendations

The Gosford CBD is supported by an historic network of good quality pedestrian pathways, generally provided along both sides of the roads. As Gosford is revitalised the ongoing development of quality pedestrian routes with adequate pathways, activity nodes, weather protection, lighting and security will occur.

5.1 Transport Management Strategy

The mode split being adopted for the Campus is a result of the application of the various key Council and State strategies and the aspirational sustainable goals for the subject site. To ensure these are adopted by staff and students a Travel Demand Management Strategy will be developed that actively encourages behaviour change and a shift away from travel by private vehicle. The implementation and monitoring of this strategy shall be overseen by the University through its facility management services.

This strategy would include the following.

Education and awareness programs

Particularly focussing on the move to and the excitement of the new campus for students and staff. These programs can build on the existing University web site for off-campus accommodation and travel options to the City campuses. They importantly focus on the message that being a student in Gosford means you don't need a car.

Include attendance during orientation of representatives from Transport for NSW and local bus providers to promote public transport and active transport options for staff and students. Also include representatives from other transport mode providers as appropriate such as Go Get, Uber, bicycle rider groups.

Promote and develop Ride to Campus and Walk to Campus days, cycling buddies etc.

University travel plan

Travel Access Guides (TAGs) for students are regularly updated to allow for current travel opportunities to the University's campuses. They will be updated to provide information on access to the GCCD but also provide information on inter-campus travel to Ourimbah and other relevant transport information if appropriate.

The travel plan as part of the University web site may include information about adopting technology as a commuter, information from Transport NSW, trip planning, walking and cycling apps, bike routes and bike user groups (BUGs) as well as relevant car sharing schemes, online shopping and local grocery delivery options.

The following provides examples of actions that may be considered appropriate for the Campus and may be included in a workplace and campus travel plan.

Active Transport

1. Introduce the role of Transport Coordinator to oversee the implementation and management of the Green Travel Plan.
2. Maintain and update Travel Access Guides to include the Gosford Campus
3. Provide specific information for attendees at Gosford to access railways station and campus bicycle storage.
4. Educate all staff about their travel choices and provide an information pack to encourage active transport and shared travel as part of the staff induction procedure. Include accommodation, local public transport, walking and cycling information.
5. Encourage shared travel across the various Faculties, including those based at Gosford Hospital to maximise travel options.
6. Provide participants with information that makes their travel choices easy to make.

Bicycle and Pedestrian Travel

1. Ensure that those who are intending to ride are well supported including allocation of lockers, provision of route information, secure and easy to access bike storage, end of trip facilities.
2. Promote riding and walking to Uni during orientation.
3. Promote riding buddy groups and Bike User Groups (BUGs).
4. Promote use of E-bikes for easier travel.
5. Promote specific Ride to Work/Uni days.
6. Install NSW Transport Cycling trip planners on staff and student workstations.
7. Promote the benefits of walking and cycling to all staff and student that live between 2 and 5 kms of the campus.

Public Transport

1. Ensure students and staff who are open to travelling by public transport have sufficient information and support for this to be a positive experience. Deal with any problems that arise to assist them trying public transport travel again.
2. Add up to date travel information and trip planning to individual workstations and intranet.
3. Investigate technology implemented by Transport for NSW and incorporate into staff and student information at the time of occupancy
4. Provide information about public transport to new staff and students as part of the induction/orientation program.
5. Investigate the feasibility for staff to purchase tickets and passes through payroll deductions.
6. Ensure ticketing for public transport is readily available and staff and students are aware of how to access ticketing.

Events

1. Develop an Event Management Plan to provide for larger events at the site
2. Investigate use of the Ourimbah Shuttle to provide for inter-campus travel for guests if appropriate. Include information on parking at Ourimbah to use the shuttle.

Hybrid Working/Telecommuting

1. Support hybrid working for staff who do not need to attend the campus to reduce demands on private vehicle usage.
2. Encourage online meetings (Teams/Zoom etc) to avoid the need for travel for face to face attendance

Parking Policy

1. Implement parking policy which supports the Gosford Campus Travel Mode targets.

5.2 Quality End of Trip Facilities for walking and cycling

The inclusion of quality end of trip facilities including access to ten showers and bike storage (53 bikes) has been incorporated into the plans for the site.

5.3 Monitoring and Review

A Green Travel Plan is a living document which to ensure a successful outcome needs to be monitored and the actions reviewed and modified to support changing circumstances.

Actions implemented should be monitored to ensure they are having a positive impact in achieving the goals of reducing the degree of private car usage, particularly for single drivers or a parent and individual child.

Such a review should be monitored frequently during the first year of implementation or whilst the school cohort is expanding to adjust and modify as necessary. Once the plan has been fully implemented then an annual review is appropriate.

Gosford City Campus Development

University of Newcastle

Preliminary Construction
Pedestrian and Traffic
Management Plan

December 2022

Mann Street/Beane Street/Hills Street

Preliminary Construction Traffic Management Plan

Author: Cathy Thomas/Sean Morgan

Client: University of Newcastle

Issue: Ver01/21.12.2022

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21 December 2022

Quality Review and Document History

Version	Date	Description	Prepared By	Checked By
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1 Introduction

Seca Solution Pty Ltd has been commissioned by Lyons on behalf of the University of Newcastle to prepare a draft Construction Traffic Management Plan for Stage 1 of the proposed Gosford City Campus Development (GCCD) as a condition of the SEARs for the project.

Provide a Construction Traffic Management Plan detailing predicted construction vehicle routes, access and parking arrangements, coordination with other construction occurring in the area, and how impacts on existing traffic, pedestrian and bicycle networks would be managed and mitigated.

The Construction Pedestrian and Traffic Management Plan (CPTMP) is to ensure traffic and pedestrian issues can be safely and efficiently managed during the construction activities on site.

The subject site, zoned B4, has previously operated as a Mitre 10 Hardware store with a shopfront on Mann Street and a large hardstand area off Hills Street to the rear.

The concept for the campus provides teaching accommodation, and space to suit an Innovation Centre along with Community engagement. The development will seek to provide a building fostering collaboration in the areas of education and entrepreneurial endeavour.

The proposed work is in a single stage.

The site is located within the Gosford CBD on the corner of Mann Street, Beane Street and Hills Street with frontage to both Mann Street and Beane Street and access to Hills Street (Figure 1-1). The construction site includes the subject site and adjacent land which fronts Hills Street. As this plan is being prepared prior to approval there is no contractor yet appointed and no construction methodology confirmed. Assumptions around vehicle access and the detailed management of traffic along with consideration of adjacent developments will require review as part of the construction certification for the development. Access for vehicles is anticipated to be via either Mann Street or Hills Street with both streets offering a straight and level alignment with Beane Street providing a steeper gradient.

The location of the site is shown below in Figure 1-1.

1.1 Existing Road Network and Local Characteristics

The major road through the locality is **Mann Street**, which forms part of the Pacific Highway which in turn forms part of the regional road network and to the north of the site, from its intersection with Henry Parry Drive, forms part of HW10. In the immediate vicinity of the site Mann Street is an unclassified regional road. Council is therefore the road authority.

Mann Street provides a single lane of travel in each direction in the immediate vicinity of the subject site, with timed parking on street permitted for much of its length. There is no central median, allowing vehicles to turn right in and out of numerous existing developments along this length of Mann Street. It operates under the posted speed limit of 60 km/h. There are footways to both sides of the road and there are signal controlled intersections at key locations along the length of the road that allow incorporate pedestrian crossings on Mann Street.

Mann Street operates as a main corridor for bus services accessing the rail and bus interchange south of the site.

Mann Street connects with Beane Street adjacent to the subject site at a T-intersection with Mann Street having priority. Beane Street is a local street providing access to various business sites and to the east to the local established housing area.

Parking controls on Beane Street include an area along the site frontage which provides for bus layovers overs.



Figure 1-1 – Site Location

To the east of the site is Hills Street which connects with Beane Street via a 4-way roundabout. Hills Street connects with Watt Street to the south and runs in a north-south direction parallel to Mann Street, allowing for alternative access routes to connect with the centre of Gosford to the south of the site.

To the north Hills Street connects with Etna Street via a 4-way roundabout. Etna Street then connects with Mann Street via a 4-way signal controlled intersection. The fourth leg of the intersection is Racecourse Road that connects over the nearby railway line and provides access to Gosford Hospital and a connection further south-west of the location with the Central Coast Highway.

Parking is restricted at the immediate approach to the traffic signals at Mann Street to ensure maximum capacity for vehicles approaching the signals.

Pedestrian facilities are well developed in the Gosford city centre with footpaths along all boundaries of the site. Pedestrian demands are not however significant along the site frontages with the main attractions (shops and transportation) being south of the site while the Gosford Hospital is to the west.

There are no mid-block pedestrian crossings along Mann Street however there are splitter islands with pedestrian refuges at the roundabout intersection of Mann Street and Faunce Street south of the site in the vicinity of the railway station and bus interchange. There is also an overhead pedestrian bridge 50m south of this intersection.

The signalised intersection of Mann Street and Racecourse Road to the north of the site provides pedestrian phases on 3 of the 4 legs allowing for safe pedestrian movements at this intersection and full connectivity.



Figure 1-2 Aerial image of subject site within context of road frontages

1.2 Traffic Volumes and Road Operation

Data collected by Seca Solution in 2015 determined the two-way flows on Mann Street (south of Etna Street) were:

- 864vph split 505 southbound (58%) in the morning peak; and
- 968 vph split 559 northbound (58%) in the in the afternoon peak

Traffic flows on Beane Street and Hills Street are significantly less.

The intersection of Mann Street and Racecourse Road / Etna Street creates delays and congestion for drivers, but the queues for each approach clear on most cycles of the green phase.

There is a very high demand for the right turn southbound on Mann Street turning into Racecourse Road and the reverse left turn movement. The delays for these turning movements are exacerbated by the single lane of travel

over the railway line and the operation of the roundabout of Racecourse Road and Showground Road. This is a single lane roundabout with restricted visibility and vehicle movement through this roundabout are slow, leading to queues back to Mann Street.

2 Construction Activities

2.1 Methodology

The development requires the demolition of the existing building on site and the construction of the new building (Stage 1) on the site western side of the site. The site historically operated as a Mitre 10 Hardware store with heavy vehicles movements associated with deliveries and purchases from the access on Hills Street.

As the construction is primarily to one half of the site with the eastern side allowing for future stages for the Gosford Campus, all construction vehicles (potentially including cranes) are anticipated to be able to be located within the site. There may however be requirements for work zones depending upon the construction methodology. It is expected that a site office shall also be incorporated into the site.

As part of the construction works, a temporary access may be required on Mann Street in a manner similar to the proposed project. This may however allow for both access and egress during construction. This driveway shall not require traffic control and drivers exiting shall observe NSW Road Rules giving way to pedestrians as well as traffic along Mann Street.

Access to the site shall also be provided along Hills Street with the majority of movements anticipated to use this access.

The construction works will have minimal impacts to the adjacent footpaths with no diversions anticipated unless work zones are required. Whilst work is being undertaken along the frontages, including the installation of driveways and new footpaths/public domain works pedestrian detour signs shall be appropriate to advise pedestrians of footpath closures.

2.2 Timing

This timetable shall be confirmed following approval and once a contractor is appointed.

2.3 Working Hours

Construction hours would be between 7:00am and 6:00pm Monday to Friday and 8.00 AM to 1.00 PM on a Saturday. No construction work is to be carried out on a Sunday or public holiday. No construction work contributing to unacceptable noise levels or major deliveries are scheduled outside of the weekdays in line with EPA Guidelines.

Work may be undertaken outside these hours where the following occurs:

- The delivery of fill or material may occur outside these hours if required by the Police or other authorities.
- Council providing permission for working out of hours;
- It is required in an emergency to avoid loss of life, damage to property and / or to prevent environmental harm;
- The work is approved from the Construction Noise and Vibration Management Plan;
- Residents likely to be affected by the works are notified of the timing and duration of these works at least 48 hours prior to the commencement of the works.

2.4 Construction staff numbers

Peak demand levels could be in the order of 100 construction workers based on site during the construction stage. Whilst parking may be available on site, construction staff shall be encouraged to share travel arrangements or travel to the site by bus or train when possible. During the earlier stages of the construction work the staff levels will be lower and they will gradually ramp up over the project timeframe to the peak of 100 staff.

3 Traffic Management Assessment

The proposed traffic management measures allow for access direct off Hills Street and Manns Street as required. The majority of heavy vehicles are expected to approach the site from the west given the industrial sites at Somersby with less from the north. Some heavy vehicles may also approach from the east.

Demolition waste is likely to be transferred to the north (Wyang and Jilliby).

Heavy vehicle movements, including deliveries are anticipated primarily from the west and north with suitable routes along:

- Pacific Motorway / Central Coast Highway/Racecourse Road/ Etna Street/Hills Street
- Pacific Highway/ Manns Street/ Etna Street/Hills Street

Truck movements to and from the site are as shown in Figure 3-1.

During the 12-18 months of work on site there will be a maximum of 100 people working on site. The site is located within the Gosford CBD and allows for good connection to the public transport routes in the locality which will offer the opportunity for construction staff to travel by public transport rather than drive. Light vehicles movements may approach and depart from various routes, reducing the impact on any single road or intersection. The impact of this additional traffic on Hills Street would be acceptable being in the order of 60 vph in the AM peak north of the site (60% of demands) as a worst case scenario and less to the south.

Due to the nature of the work the maximum number of trucks through the day may be 5 vehicles per hour associated with concrete pours and delivery of material to the site. These trucks will typically be a heavy rigid vehicle, with a length of 12.5 metres with some larger deliveries via semi-trailers. These vehicles be able to manoeuvre either within or through the site to enter and exit in a forward direction.

There will be no general public vehicles within the site during the construction works.

Pedestrian movements are not overly high and would currently occur on the footpaths opposite and adjacent to the subject site on Mann Street with lower demands on the side streets. The proposed works are anticipated to be primarily contained within the site with minimal impact on these pedestrian pathways. Pedestrian signage may be required during public domain and access construction.

Except during peak times (concrete pours) the truck numbers associated with the construction work would be comparable to the traffic originally associated with the use of the site as a hardware store, using the hardstand to the rear of the site with access off Hills Street provided for large truck deliveries and pick ups by customers. It is considered that the movement of vehicles in and out of the site for construction works can safely occur with minimal delays to pedestrians and in a safe manner. If access for heavy vehicles is required from Mann Street these should be encouraged to be left in movements only to reduce the demand for heavy vehicles through the city centre and reduce delays associated with right turning vehicles into the site during the peak periods. No limitation on truck access times is considered appropriate for the project.

By directing the majority of vehicles to access via Hills Street there will be minimal impact upon public transport services. There is no requirement for diversions. The location of the bus stop layover on Beane Street may require consideration during the works and shall be reviewed as part of the final CTMP.

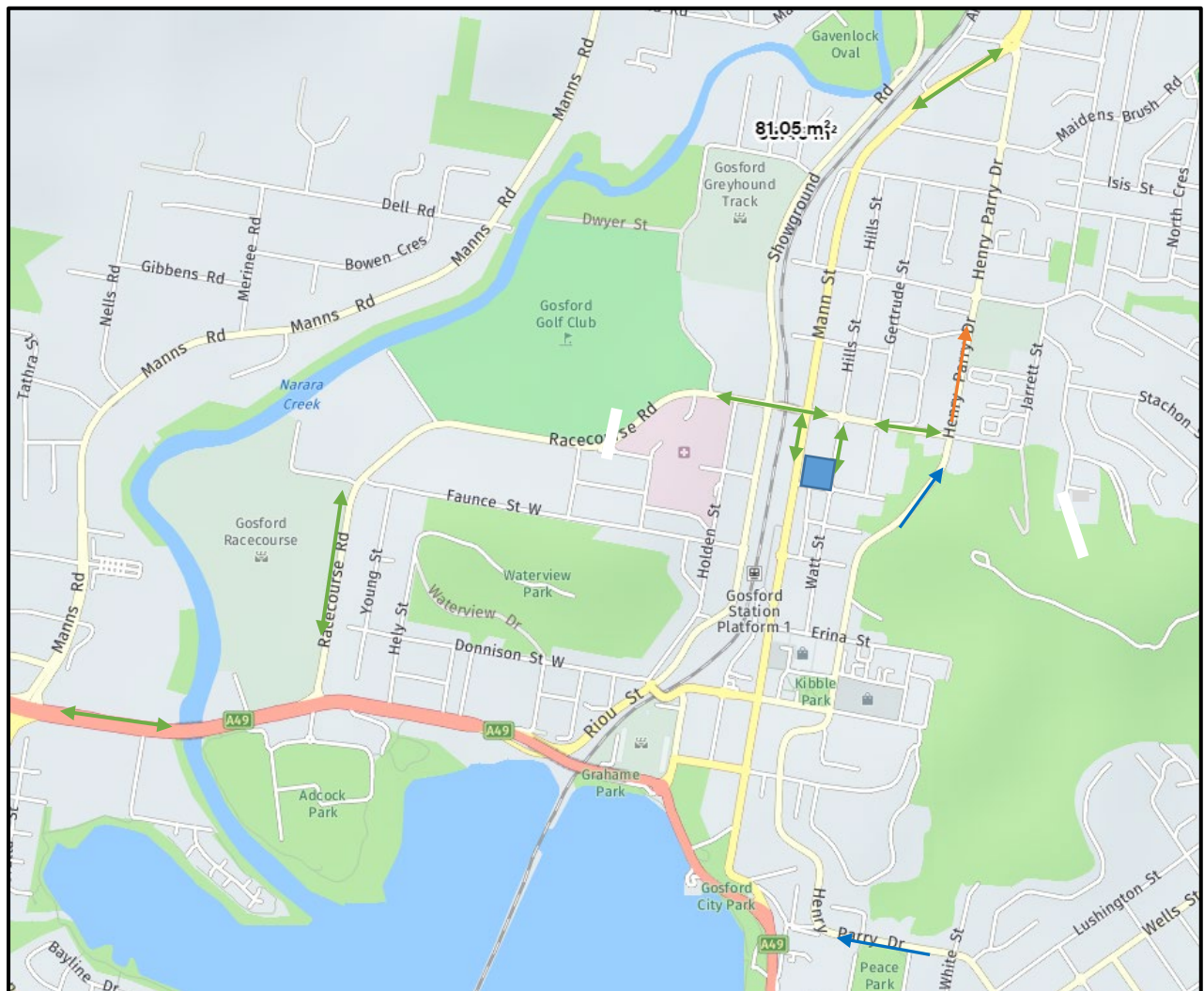
The access routes primarily utilise arterial roads with adequate capacity to accommodate these movements.

There will be minimal impact for emergency vehicles, heavy vehicles, cyclists with no diversions required.

Given the timeframe of the works, the lack of detours or impacts anticipated on the local roads and the location of the works zones primarily within the site it is anticipated there will be minimal impact upon development within the locality of the site. This shall be subject to review approaching the construction as part of the final CTMP.

There will be minimal impact upon adjoining Council areas. Traffic routes in and out of the locality will be along the arterial road network which will experience minimal impacts due to the works.

Due to the nature of the works and the minimal impact upon the external road network no public consultation is required for this project.



- Inbound/outbound vehicles
- Inbound heavy vehicles
- Outbound heavy vehicles

Figure 3-1 Vehicle Movements associated with Construction Works to the subject site (■)

4 Traffic Control Plan

4.1 General

A TGS shall be prepared to meet the requirements of the Traffic Control at Work Sites Manual (TCAWS) current at the time of the works. The plan shall cover the access and egress requirements to and from the site and the safe passage of vehicles in and out of the subject site via Hills Street and Mann Street during the construction works.

At all times the TCAWS guidelines must be adhered to. Please refer to the guidelines for traffic control matters not listed in this report.

Any OSOM vehicle movements shall be subject to a separate, task specific risk assessment & Traffic Guidance Scheme/Traffic Control Plan.

4.2 Existing traffic conditions on Mann Street and Hills Street

- 60km/hr speed limit on Mann Street, 50km/h on Hills Street;
- Peak AM period traffic in the order of 500 vehicles per hour one-way southbound adjacent to site and 410 vehicles per hour one-way southbound in the PM. Daily movements southbound approximately 4,600 vehicles per day
- Work site to be confirmed however access is anticipated from Hills Street with a secondary access from Mann Street
- No restrictions to access to adjacent properties are to be created by the works.

4.3 Cyclists and Pedestrians

There are footpaths for pedestrians along the Project Site boundary on both sides of Mann Street as well as on Hills Street and Beane Street. Diversions will be dependent upon final construction methodology and whether there is the need for work zones.

No detours required for cyclists in this area.

4.4 General Traffic Control Considerations

The factors to be considered in preparing this TGS are:

- During the construction, all heavy vehicles will access the site off Hills Street (right turn in) or Mann Street (left turn in)
- Parking available on site for some construction staff, otherwise parking is generally available within the general locality of the subject site in parking stations if required. Site is well located for access via public transport for staff.
- Loading/delivery expected to be completed within the subject site. There maybe the requirement for deliveries to the front of the site off Mann Street
- There will be no change to the speed zone during the duration of the construction works
- Pedestrian and cyclist considerations – there is no change to the existing situation for cyclists. Footpath closures may be required for pedestrians depending upon methodology
- Location of machines/personnel on-site relative to roadway;
- Access to/from Work Site;
- Timing of works, and
- Safety of road users and site personnel.

The TCAWS manual recommends safety barriers are considered if:

- The location will continue to be a work area for longer than two weeks. (Applicable)
- Traffic speeds are likely to be greater than 80 km/hr. (Not applicable)
- AADT exceeds 5000 vehicles for traffic lane nearest the works. (To be confirmed)
- The work area is less than 3 metres clear of traffic on straights (less on tight curves) (Not Applicable)
- Personnel do not have other protection, such as operating plant. (Not Applicable)

Construction Works are expected to take around 12-18 months to complete

Subject to review:

The location and nature of the work **will not** require safety barrier to be installed.

The local speed zone limits of 60 km/hr is considered acceptable as the construction works are all contained within the site and the site personnel will be protected by construction fencing.

4.5 Traffic Control – Signage and Line Marking

The TGS shall provide Work Site definition. General signage and line marking are included due to the nature of the passing traffic and the location and nature of the works.

All signs shall be permanently mounted and shall be operational at all times.

A copy of the TGS must be on site at all times during the demolition and construction stages.

4.6 Daily Checklist

In accordance with the Roads and Traffic Authority of New South Wales 'Traffic Control at Worksites' guidelines, the site foreman / manager should complete a daily traffic control checklist and this checklist should be filed for future reference.

4.7 Contractors Contact Details

Project Manager: TBC

Mobile:

E-mail

4.8 TCP Approval

This TGS will be submitted to the road authority for review and approval.

Details for lodging this TGS and the Construction Traffic Management Plan are:

Central Coast Council:

91-99 Mann Street, Gosford
PO Box 20
Wyong NSW 2259
Phone: (02) 1300 463 954

Transport for NSW (Road and Maritime Services):

Road Occupancy Unit (ROU) Hunter
1300 656 371
road.access@rms.nsw.gov.au

This Traffic Guidance Scheme is to be prepared and reviewed by suitable qualified professionals in accordance with the TCAWS current at the time.

Cathy Thomas

Traffic Control Work -Prepare a Work Zone TCT0012545

Director

Sean Morgan (TCT0066674)

Director